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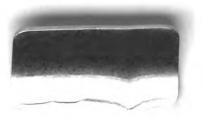
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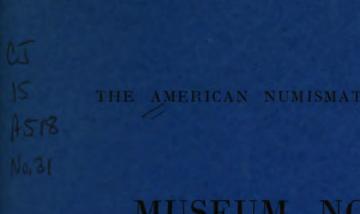






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THE AMERICAN NUMISMATIC SOCIETY

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THE ARADIAN PATAECUS

J. ELAYI and A. G. ELAYI

A figurehead appearing on the prow of the war galley in Aradian pre-Alexandrine silver coinage has sometimes been identified with a Pataecus. These figureheads appear most often in the series with an obverse of a bearded male head with the eye in profile; these coins were probably struck from the beginning of the fourth century. They began to appear in the previous series with the eye almost full, bearing the letters M' and numerals, and later on the bronze coins with an ichthyomorphic deity on the obverse. There is no agreement about the identification of this Aradian figurehead on the prow: some numismatists identify it as the Pataecus described by Herodotus; some hesitate to accept the identification, and others refuse it. We shall compare the



¹ For the dating, see J. Elayi and A. G. Elayi, "A Treasure of Coins from Arados," *Journal of Ancient Near Eastern Studies*, forthcoming.

² E. T. Newell, "A Cilician Find," NC 1914, p. 29.

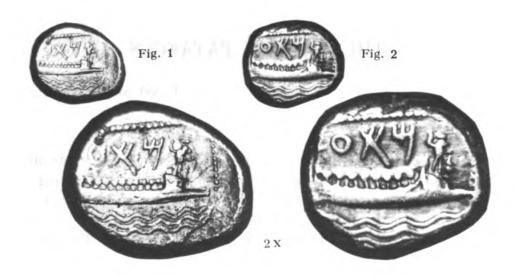
³ G. F. Hill, *BMCPhoenicia*, pl. 2, 30 and 31. The representation of figureheads on the prow is very rare on other Aradian previous series: see for example the helmet on pl. 1, 19.

⁴ RE 18.4, s.v. "Pataikoi," cols. 2112-13 (F. Windberg); E. Babelon, Traité 2, 2, pp. 519-21; and, Catalogue des monnaies grecques de la Bibliothèque Nationale, Les Perses achéménides (Paris, 1893), p. 156; J. N. Svoronos, "Stylides, ancres, hierae, aphlasta, stoloi, akrostolia, embola, proembola et totems marins," JIAN 16 (1914), pp. 81-152.

⁵ BMCPhoenicia, p. xxii.

⁶ J. W. Betlyon, The Coinage and Mints of Phoenicia, the Pre-Alexandrine Period, Harvard Semitic Monographs 26 (Chico, 1982), p. 107, n. 96.

representation of the figurehead, which is well preserved only on some coins (Figures 1 and 2), with Herodotus's description, in order to determine whether they fit together.



First we observe that this figurehead was much taller than a man, when compared to the diameter of the shields, if we assume that it is represented to scale. Obviously, it is not a human shape but an animal one, as is shown from the profile of its head with a big muzzle, its high placed abdomen, very low shoulders and long, thin arms and legs. When the coin is examined with a microscope, the head of the animal reminds us of a monkey while the body looks like a batrachian such as a frog. Therefore, it seems logical to take this hybrid for a mythical animal, one which is unknown until now in Phoenician mythology; we note, however,

⁷ Figure 1, Paris, private coll., 10.40 g; Figure 2, Paris, private coll., 10.50 g. Other examples are from a hoard of 186 coins from Arados (with one Athenian tetradrachm) found in September 1983 in the coastland south of Arwad: see J. Elayi and A. G. Elayi (above, n. 1).

⁸ An enlargement similar to the one of the warriors on Byblian coins cannot be excluded.

⁹ For the apotropaic function of the frog in antiquity, see RE 7, s.v. "Frosch," cols. 113-19 (M. Wellmann).

that it wears on its head a crown made of feathers similar to the crown of Bes.¹⁰

The identification with the Pataecus is based on Herodotus's text in which he compares the statue of Hephaestus with the Phoenician Pataeci:

"Εστι γὰρ τοῦ 'Ηφαίστου τὤγαλμα τοῖσι Φοινικηίοισι Παταίκοισι ἐμφερέστατον, τοὺς οἱ Φοίνικες ἐν τῆσι πρώρησι τῶν τριηρέων περιάγουσι · δς δὲ τούτους μὴ ὅπωπε, ἐγὼ δέ <οἱ>σημανέω · πυγμαίου ἀνδρὸς μίμησίς ἐστι.

This image of Hephaestus is most like to the Phoenician Pataeci which the Phoenicians carry on the prows of their triremes. I will describe it for him who has not seen these figures: it is in the likeness of a dwarf.¹¹

According to Herodotus, the Phoenician war galleys $(\tau \varrho \iota \eta \varrho \acute{\epsilon} \omega r)$ used to carry on the prow figureheads called Pataeci; it is also clear from this text that the Pataeci were dwarfs. No doubt they were located on the prow as indicated in this text and not on the stern as indicated in the Lexicon Suidas $(\acute{\epsilon} \nu \ \tau a \bar{\iota} \varsigma \ \pi \varrho \acute{\nu} \mu \nu a \iota \varsigma \ \acute{\iota} \varrho \nu \mu \acute{\epsilon} \nu o \iota)$, ¹² since all Phoenician coins represent figureheads on the prow, never on the stern. ¹³ Herodotus's description does not correspond to the figureheads of Aradian coins, illustrated here, which are neither men $(\check{a}\nu \delta \varrho \varepsilon \varsigma)$ nor dwarfs $(\pi \nu \nu \mu a \acute{\iota} \nu \nu)$, but huge mythical animals possibly enlarged by the engraver. How can this contradiction be explained? The representation on coins is a document which cannot be questioned; Herodotus's testimony is also probably truthful because he must have seen Tyrian triremes during his trip to Tyre about the middle of the fifth century ¹⁴ and because he is worthy of trust. We shall propose two hypotheses, the first of which is more likely.



¹⁰ G. Perrot and C. Chipiez, *Histoire de l'art dans l'antiquilé*, 3 (Paris, 1885), p. 422, 295, and p. 423, 296.

¹¹ Herodotus 3, 37.

¹² S.v. Πάταικοι. Contra C. Torr, Ancient Ships (Cambridge, 1894), p. 67 and n. 150, who thought that the error was in Herodotus's text.

¹⁸ See also Eschyle, Les sept contre Thèbes (Paris, 1969), v. 21.

¹⁴ For his trip to Tyre, see Ph.-E. Legrand, *Hérodote*, *Introduction* (Paris, 1932), pp. 24-29.

Since Herodotus knew only Tyre in Phoenicia, he probably described the Tyrian Pataeci. These could have been dwarfs since we have not a single representation of the Tyrian war galley in the Persian period. Herodotus had few chances to see war galleys from other Phoenician cities in the Tyrian harbors; and, from the end of the Persian wars to the middle of the fifth century, the Phoenician war galleys of the Persian fleet did not approach the Greek harbors. But if he knew only Tyrian triremes, why did he say "Phoenician triremes?" Since the word "Pataeci" apparently designated, for the Greeks, the Phoenician figureheads on the prow, Herodotus who saw only the one Tyrian kind (representing dwarfs) imprudently generalized his observation to all Phoenician triremes. If war galleys from other Phoenician cities were carrying dwarfs on the prow, one would expect these dwarfs to have been represented on the coinage rather than the different figureheads which are on these coins. The second, less likely hypothesis is that the form of the figureheads had changed between Herodotus's trip to Tyre (middle of the fifth century), in which period they were dwarfs, and the representation of war galleys on coinage (third quarter of the fifth century for Sidonian and Byblian coinage; first quarter of the fourth century for Aradian coinage).15

What was in fact a Pataecus? This word, which designated for the Greeks the Phoenician figureheads on the prow of war galleys, was used at the time of Herodotus's trip to Tyre as well as in the late Persian period since we know that it was preserved much later in the Lexicon Suidas. The etymology proposed by F. K. Movers, followed by J. N. Svoronos, πατάσσειν meaning "to strike," "to hammer," does not seem likely, although it fits with the threatening attitude of the Aradian figurehead illustrated here. Its arms are lifted with fists apparently clenched; sometimes, this figurehead brandishes objects which could be weapons (Figure 2). Sometimes there is on the prow an uncertain object which has not yet been mentioned and which



¹⁵ However, this hypothesis cannot be excluded because Byblian and Sidonian coinages show an evolution in the form of figureheads.

¹⁶ F. K. Movers, Die Phönizier, 1 (Bonn, 1841), p. 653.

¹⁷ Svoronos (above, n. 4), pp. 135-38. The etymology deriving "Pataecus" from the Egyptian god "Ptah" seems even less likely.

could confirm the threatening attitude of the figurehead. It is placed on the forecastle on the left side of the figurehead. Its size varies from one coin to another: sometimes rather large (as illustrated here on Figure 2), it may also be small.18 On Figure 1 and others, the hand of the figurehead seems to hold the upper end of the object. This could be a club with two projections if we compare it with the club represented on the coins of Heraclea of Pontus which has a variable number of projections.¹⁹ According to J. N. Svoronos, the Pataeci would have had an apotropaic purpose — to strike the waves breaking against the prow.²⁰ This was probably true because on some Aradian coins, in the right field, two lines are represented, looking like waves breaking against the figurehead on the prow.²¹ But another function of the Pataecus was probably to threaten the enemy; every known kind of Phoenician figurehead implies power and fighting symbols, for example the helmet of the Sidonian and Aradian coins, the armed warrior of the Sidonian coins, and the ram- or lion-head of the Giblite coins.

In short, Παταίχοι would be the term designating any kind of figure-head on the prow of Phoenician triremes. These figureheads had different shapes as can be seen from their appearance on Phoenician coins. The ones described by Herodotus would be the special Tyrian Pataeci. The mythical animal represented on Aradian coins would be another kind. However, we wonder what local belief was related to the Aradian Pataecus and what change, if any, can be associated with the introduction of its representation on Aradian coinage.



¹⁸ Babelon (above, n. 4), Perses, pl. 22, 20; and Traité 2, 2, 836, pl. 116, 24; de Luynes 3072.

¹⁹ Babelon (above, n. 4), *Trailé*, pl. 182, 22-27 and 31-33. Some later Paphian coins bear also two kinds of candlesticks of similar shape: Babelon, *Perses*, p. 118, 808, and pl. 21, 23.

²⁰ Svoronos (above, n. 4), pp. 135-38.

²¹ De Luynes 3070; Traité 2, 2, 836, pl. 116, 23.

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THE SILVER STATER ISSUES OF PHARNABAZOS AND DATAMES FROM THE MINT OF TARSUS IN CILICIA

(PLATES 1-5)

ROBERT A. MOYSEY

Attributed to the mint of Tarsus in Cilicia are six silver stater issues of the Persian satraps Pharnabazos and Datames. The relative chronology of these issues has not been established and, in particular, the relationship of the two substantial issues of Pharnabazos and Datames which imitate the famous Syracusan tetradrachm of Kimon has not been studied. At present all these issues are generally dated ca. 379–372 B.C. and are associated with Persian expeditions against Egypt led by these two satraps. The purpose of this study is to establish a relative

and 379-374 and Datames' coins 378-374. Hill in *BMCLycaonia*, pp. lxxviii-lxxxi and 164-68 gives the most widely accepted dates: Pharnabazos 379-374 and Datames 378-372. These dates are reiterated in *SNGCop*, *SNGvAulock* and most sale catalogues. Compare Head, *HN*, pp. 730-31 and G. K. Jenkins, *Ancient Greek Coins* (New York, 1972), p. 135. O. Mørkholm, "A South Anatolian Coin Hoard," *AA* 30 (1959), p. 186, hereafter cited as Mørkholm, accepted the traditional dates 379-373 for Pharnabazos' and Datames' Cilician issues. C. Kraay, *Archaic and Classical Greek Coins* (Berkeley, 1976), pp. 281-83, also dates these issues in the 370s, but does add "some at least of these issues were probably minted around 370 when Datames rebelled against the Persian king " Nepos, *Dat*. 3.5, seems to say that Datames had joint command of the Egyptian expedition with Pharnabazos from ca. 378, but Diodoros' more detailed account (15. 41-44) makes it clear that Pharnabazos was in



chronology for these issues based on a die study in conjunction with a study of the weights and a re-assessment of the iconography of the types. The significance of these findings for our understanding of the history of these two satraps' careers and especially for the Satraps' Revolt will then be set forth.

Pharnabazos and Datames both issued staters whose obverse type was an imitation of Kimon's facing Arethusa and whose reverse shows a bearded warrior sometimes identified as Ares in an Attic helmet. The reverse legend in Aramaic distinguishes Pharnabazos' from Datames' coins. Pharnabazos also issued staters with the Baal of Tarsus seated left on a diphros on the obverse and the same helmeted warrior or Ares on the reverse. Attributed to Pharnabazos are a few extant staters with the head of Herakles in a lion scalp on the obverse and the same helmeted warrior or Ares on the reverse. These coins however have only the legends KLK (Cilicia) in Aramaic on the obverse and in Greek TEPSIKON (at Tarsus) on the reverse. In addition to the imitation Arethusa coin, Datames minted two stater issues both with Baal of Tarsus enthroned on the obverse, but with different and unique reverses which will be discussed in detail below.

THE NUMISMATIC EVIDENCE

A die study of 124 Pharnabazos imitation Arethusa staters (hereafter referred to as lady/Ares staters) and 307 Datames lady/Ares staters gathered from the collections of the ANS, eleven European cabinets, published collections and sale catalogues reveals the relationship of these two issues.² Examination of 180 different surviving obverses of

sole command of the expedition from 378 to 373 and Nepos contradicts himself when he goes on to say that Artaxerxes recalled Pharnabazos and replaced him with Datames (Dat. 3.5).

² I wish to thank the following scholars and curators who have supplied information, casts or photographs: P. Arnold (Dresden), G. Dembski (Vienna), P. Franke (Saarbrücken), D. Gerin and H. Nicolet (Paris), H. Küthmann (Munich), J. Lallemand (Brussels), E. Levante (Paris), M. Oeconomides (Athens), M. Price (London), H.-D. Schulz (Berlin), A. Spaer (Jerusalem), J. P. A. van der Vin ('s Gravenhage), K.-M. von Kaenel (Winterthur), and U. Westermark (Stockholm). This study began as a paper for the ANS Graduate Seminar in 1982. Nancy Waggoner has provided helpful



these two issues shows that only two obverses were used to mint staters with both Pharnabazos and Datames reverse dies.³ The fact that there is no further overlapping of obverses between the two issues suggests that the two satraps minted separately, not concurrently as is implied in standard numismatic reference works and catalogues.⁴ Moreover, one of the two obverse dies was broken at the nymph's chin. The two coins minted with this obverse die by Pharnabazos indicate that the break had begun, but the rest of the die is in relatively good condition.⁵ The five coins minted by Datames with the same die show progressive deterioration of the die until, in the latest example, the outer perimeter of the die is also broken.⁶

Several other factors support the argument that Pharnabazos' lady/ Ares coins should be dated before, not joined with, Datames'. Mørkholm commented in his study of the Pharnabazos and Datames lady/Ares staters found in the Karaman hoard (*IGCH* 1244) that "all the coins of Datames look quite new and fresh," while the coins of Pharnabazos showed varying degrees of wear. There is also a small drop in average weight of Datames' coins as compared to those of Pharnabazos—from 10.602 to 10.503 g (Table, p. 16). Since coins generally tend to weigh less in successive issues, this may suggest that Pharnabazos' generally heavier coins were minted earlier. Finally, stylistic differences in the two issues

guidance throughout the course of its progress. I am greatly indebted to her for advice and encouragement. Warm thanks go also to the entire staff of the ANS for their kind help. I thank Christopher Moss for help with the research. Finally, I thank my colleagues in the Classics Department and the administration at the University of Mississippi who made it possible for me to take a leave of absence to complete this project.

- 3 Obverses 3.72 and 73 in the Catalogue, Plate 1, 1-4.
- ⁴ Babelon, Hill, Head and Mørkholm (above, n. 1) all imply that Pharnabazos and Datames were minting concurrently since they attribute the coins to the same mint in the same period.
 - ⁵ Obverse 3.72, reverses a-b, Plate 1, 1.
 - 6 Obverse 3.72, reverses c-f, Plate 1, 2.
 - ⁷ Mørkholm, p. 187.
- ⁸ This general tendency is not always applicable. Other factors can influence fluctuations in average weights of issues (see p. 21). Margaret Thompson, *The New Style Silver Coinage of Athens* (New York, 1961), pp. 645–46, notes that Athenian tetradrachms lost weight during the years 150–120, but regained weight thereafter perhaps as a result of reforms.



suggest that Pharnabazos' lady/Ares staters precede Datames'. Obverses 1–16 of Pharnabazos' issue bear a closer resemblance to the Kimonian original in that a small dolphin is found in the lower left curls of the nymph's hair as in the Syracusan coin (Plate 1, 5–6). These coins are all surrounded by a smooth, linear border. It seems likely that we should date the Pharnabazos obverses with smooth, linear borders but without the dolphin in the lower left curls (nos. 17–49) after the obverses with the dolphin and that the obverses with dotted borders (nos. 50–73) should be dated latest since all Datames' obverses have dotted borders.

The earliest Pharnabazos lady/Ares staters are probably those with the distinctive reverses which have bilingual legends KIAIKION in Greek and Khilik in Aramaic, but no reference to Pharnabazos specifically (obverses 1–2, Plate 1, 7). These coins may even date to the earlier Persian expedition against Egypt dated ca. 385–383, since that expedition was led by Tithraustes, Pharnabazos and Abrokomas. The fact that this was a joint command might account for the lack of a reference to Pharnabazos on these coins (see below, n. 23).

The style of the portrait of the nymph, especially the treatment of the hair, is sometimes distinctive enough to suggest that certain obverse dies were cut by the same engraver, but this criterion should probably not be used for purposes of chronology. A notable example is the distinctive wavy, art deco style of hair found on obverses 27 and 28 (Plate 1, 8). Somewhat similar are obverses 29 to 31.

The reverses of Pharnabazos' issue demonstrate a wide variety of differences in detail. Ares sometimes faces left; sometimes, right. The shape of the helmet and its visor also varies (Plate 1: 3, 5, 7-11). There are five different known mint marks: $\frac{2}{3}$, $\frac{2}{3}$, $\frac{2}{3}$ (Plate 1, 3 and 10-13). The Greek letters MA or AM are found on the helmet above the visor in some examples. The legends are sometimes at right, sometimes at left, and in some instances the legend reads *Pharnabazu Khilik*, while in other cases *Khilik* is omitted. The combinations of these differences



⁹ The principle of degeneration of style from an early well cut die to a late, poorer reproduction has been called into doubt. We cannot necessarily assume that die cutters became less skillful or more careless in chronological succession. See the comments of T. R. Martin, "The Chronology of the Fourth-Century B.C. Facing-Head Silver Coinage of Larissa," ANSMN 28 (1983), pp. 1–2.

make 27 known variant types. It is unclear whether these variants denote different series within the issue. The absence of useful obverse/reverse links makes it difficult to detect any comprehensible system to these variants. There is no reason to suppose that they indicate different mints or different minting authorities. Perhaps the most prudent explanation is that at least some of these variants represent control marks of some sort which helped the minting officials to account for the coins issued. Certainly the variants cannot denote different years (the system used in many Greek mints) since the number of variants is far greater than the number of years during which the coins could have been minted.

The number of coins surviving per known obverse die is insufficient to attempt an approximation of the total number of coins minted, but the large number of surviving obverses and reverses suggests many coins. Pharnabazos' chief purpose in minting these coins was probably to pay Greek mercenaries recruited to serve the Persian king's expedition against Egypt in 374/3 B.C. of which we have a rather detailed account in Diodoros.¹¹ This expedition is said to have been a major effort which involved at least four years of planning and Iphikrates of Athens served as advisor.¹²

At Ake in Palestine Pharnabazos assembled 200,000 troops from the Persian Empire and 20,000 Greek mercenaries as well as a naval force of 300 triremes and 200 triaconters.¹³ It is probable that Tarsus was a



¹⁰ Mørkholm, pp. 187-88, suggested Pharnabazos' lady/Ares issue might have been produced by various mints in Cilicia and that these mints might have been denoted by either the "mint marks" (ankh, etc.) or by the variations in the helmet.

¹¹ Diod. 15.41-44. See also Diod. 15.29.4, 38.1; Nepos, *Iph.* 2.4; Pompeius Trogus, *Prologue to Book 10*; Plut. *Artax.* 24; Poly. 3.9.38, 56, 59.

¹² Diod. 15.29.4 implies that the Athenian general Iphikrates was hired as commander of mercenaries as early as 377/6 B.C. This implication is repeated in Diod. 15.41.2 where Iphikrates reproaches Pharnabazos for having wasted several years making preparations.

¹³ Diod. 15.41.3. Nepos, *Iph.* 2, 4, says the Greek mercenaries numbered 12,000. In either case a large amount of coin would have been needed to pay these troops whose average daily stipend was three obols. See H. W. Parke, *Greek Mercenary Soldiers* (Oxford, 1933), pp. 232-33. At this rate each soldier would have been paid 90 obols/month and 20,000 men would require 1,800,000 obols. Taking the approximate figure 14.545 obols equal 1 stater we arrive at 123,750 staters per month for an

staging point and recruitment center for this expedition. This grand assault finally got under way in the spring of 373 B.C. well before the Nile's annual flood, but became bogged down and failed later that summer. Iphikrates fled and returned to Athens where he was elected strategos for the next year. We do not know precisely what happened to Pharnabazos. Nepos tells us the king recalled Pharnabazos and replaced him with Datames. The implication is that he was removed for incompetence, but Nepos and/or his source may be distorting the facts to flatter Datames. Certainly, Pharnabazos disappeared from history after his removal from command and he may have died shortly thereafter. 15

In any case, Datames probably took command of a proposed new expedition to recover Egypt for the king in the winter of 373 or spring of 372. Thus Pharnabazos' lady/Ares staters should be dated ca. 378/7–374/3 B.C. The two obverses used to mint both Pharnabazos and Datames coins should date from 374/3 to 373/2. Datames continued to mint with the same types and seems to have minted more coins than Pharnabazos judging by the number of surviving coins (21/2 times as many as Pharnabazos, and 110 obverses as opposed to 73 obverses).

Examination of Datames' lady/Ares coins reveals several further pieces of information. Two reverse die links which join the two obverses used by both Pharnabazos and Datames to obverses used by Datames alone support the assertion that Pharnabazos' coins were minted before Datames'. Both reverse dies show greater wear when used with the obverses of Datames than they did when used with the obverses of Pharnabazos and Datames (Plates 1–2, 2 and 16, 4 and 17). The 15 known variants of Datames' reverses are fewer in number than those known for Pharna-

army of 20,000. If we assume a minimum of five months for training and the duration of the Egyptian expedition, the Greek mercenaries would have required some 625,000 staters at least.



¹⁴ Diod. 15.43.5-6 for election as strategos. Nepos, *Dat.* 3.5. Nepos' source may have been Dinon of Colophon who was also used by Plutarch in his *Artaxerxes*. See J. H. Thiel, "De Dinone Colophonis Nepotis in Vita Datamis Auctore," *Mnemosyne* 51 (1923), pp. 412-14.

¹⁵ Ariobarzanes had succeeded to Pharnabazos' satrapy of Hellespontine Phrygia before 369/8 when he dispatched his agent Philiskos of Abydos to a peace conference in Greece (Dem. 23.141–42, 202; Xen., *Hell.* 7.1.27; Diod. 15.70.2).

bazos, but many are similar to those of Pharnabazos. Some noteworthy differences are the absence of mint marks and the addition of several new variants: a grape cluster in the field to the left, a palmette above the visor on the helmet, a small A or T in the lower left corner of the helmet (Plate 2, 18–21). Again these variants cannot be explained. We find that the same obverse (10) was used with reverse dies of as many as seven different variants. This seems to indicate that the mint used a die box and that there is again no discernible chronological or geographical significance to the variants. That is, the variants do not necessarily distinguish different series or denote other Cilician mints as has been suggested. 16

There is no proof for instance that the grape cluster on some Datames reverses denotes the mint of Nagidos which used the grape cluster on its reverse type. There is no stylistic similarity between the Nagidos grape cluster and the small symbol used on Datames' coins (Plate 2, 18 and 22). Further, the grape cluster is found on all the Baaltars obverses of Datames along with an ear of wheat as part of the type (Plates 4–5, 40-59). A helmeted warrior similar to the Pharnabazos Ares does appear on the reverse of a civic issue of Nagidos. The reverse has the Aramaic inscription *Pharnabazu* at left and *Khilik* at right, but the obverse shows the familiar civic type of Aphrodite seated on a throne with a sphinx at the side and NA Γ 1 Δ 1 KON along the left border. Neither obverse nor reverse has the grape cluster (Plate 2, 23).

Only small details of ornamentation vary on Datames' obverses. Four obverses show the nymph wearing the usual necklace, but here the necklace has only one central pendant rather than the usual multipendant bangles (obverses 11, 25, 67, 94; Plate 2, 24). These four obverses have a distinctly different treatment of the nymph's hair as well. It is likely that these dies were all cut by the same engraver, but this does not mean that the four dies should be grouped chronologically.¹⁸

The choice of the types used by Pharnabazos and Datames is interesting. Kimon's Arethusa tetradrachm was widely imitated in the early



¹⁶ Mørkholm, p. 187; see Kraay (above, n. 1), pp. 281-83.

¹⁷ P. Lederer, "Die Stadtprägung der Stadt Nagidos," ZfN 41 (1931), pp. 190-92, pl. 10, 20; compare BMCLycaonia 398ff.

¹⁸ See above, n. 9.

to mid-fourth century. This handsome portrait seems to have been so popular that there need not have been any connection between Syracuse and the imitator mint nor any specific local divinity parallel to Arethusa. We do not know who the Cilician coins were meant to portray. The choice was possibly made on the basis of what would be most acceptable to Greek mercenaries. Dionysios I of Syracuse, the contemporary ruler, may have used large numbers of mercenaries in his campaigns against Carthage and in aid of Sparta. Since there was a lull in the fighting in Sicily ca. 378-369, it may be that some of the mercenaries familiar with the Arethusa coins and/or other imitations were among those employed by the satraps. Pharnabazos' helmeted warrior or Ares reverse type certainly has a martial theme which would have appealled to mercenaries.

The date of Datames' lady/Ares staters should be set ca. 373/2-369/8. Datames did not take command of the Persian expedition against Egypt and would not have had occasion to mint such large quantities of Cilician staters until 373/2. He probably continued to mint them until his revolt from the king ca. 369/8 B.C.²¹ For reasons which will be explained below, it is likely that Datames changed types at the outset of his rebellion.

The two other stater issues of Pharnabazos may predate the lady/Ares issue. The Herakles/Ares issue, as noted above, cannot be attributed with certainty to Pharnabazos since the legend does not mention Pharnabazos. There are, however, several reasons why the issue may be associated with Pharnabazos. The obverse and reverse legends clearly indicate the mint of Tarsus in Cilicia (Plate 2, 25). The reverse type, the helmeted warrior of Ares facing left, bears a very strong resemblance to the Ares on the reverse of the Arethusa imitation. We should not assume, as some have suggested, that this is a portrait of the satrap.²² There is no difference in the portraits of the bearded head on the staters of Datames and on those of Pharnabazos. Rather, this seems to be an idealized conception of Ares or a Greek mercenary.



¹⁹ K. P. Erhart, The Development of the Facing Head Motif on Greek Coins and Its Relation to Classical Art (New York, 1979), pp. 181-87.

²⁰ Diod. 15.47.7, 70.1, 73.1-5. E. A. Freeman, *The History of Sicily* (Oxford, 1894), 4.197-210 and M.-P. Loicq-Berger, *Syracuse* (Brussels, 1967), p. 219.

²¹ See below, pp. 17-19 and 24-26.

²² Kraay (above, n. 1), p. 282.

Only seven coins of this issue are known. All were struck with the same obverse die. Four reverse dies are known, but there are no reverse variants. The two examples in the ANS and the one in London appear to be overstruck, but no traces remain of the type under the Heracles in lion scalp. The fact that Pharnabazos is not named on the coins may suggest an early date, possibly at the time of the earlier Persian expedition against Egypt over which Pharnabazos shared command with Abrokomas and Tithraustes.²³ There is little ancient evidence for this earlier expedition. It must antedate Isokrates' Panegyrikos (ca. 380 B.C.) which tells us the expedition lasted for a period of three years but accomplished very little.24 A date ca. 386-383 may be suggested.25 The martial motifs of the types again hint that the issue was minted for Greek mercenary pay. Both types are Greek and the reverse legend **TEPΣIKON** in Greek reinforces this argument. The average weight of this issue is the heaviest of the six stater issues under examination (Table), which may also indicate an early date.

The second issue, that bearing the Baal of Tarsus seated to left on a diphros holding a tall scepter with the Aramaic legend Baaltars and the bearded, helmeted warrior or Ares facing left, with Aramaic legends Pharnabazu and Khilik, seems to have been more substantial in size. There are 90 known examples. These represent 60 different obverse dies and 74 different reverse dies. The average weight is slightly heavier than that of Pharnabazos' lady/Ares issue and a bit lighter than the Herakles/Ares issue (Table). This would suggest that this issue should be placed between the others. Again we have the Ares figure on the reverse, but it bears a closer resemblance to the Ares on the reverse of the Arethusa imitation than that on the Herakles reverse. The reverse legend Pharnabazu also suggests the period of the Persian expedition of ca. 378–373 when Pharnabazos was in sole command.



²³ Isok. 4.140; Dem. 20.76; Nepos, Chab. 2.1; compare CAH 6, pp. 145-51 (Hall), and A. T. Olmstead, History of the Persian Empire (Chicago, 1948), p. 399, hereafter cited as Olmstead.

²⁴ R. C. Jebb, The Attic Orators, 2nd ed. (London, 1893), 2.148.

²⁵ See H. A. Troxell and N. M. Waggoner, "The Robert F. Kelley Bequest," ANSMN 23 (1978), pp. 30-31.

²⁶ The Ares on the Baaltars issue always faces left unlike the Ares on the lady/Ares issue which sometimes faces right.

TABLE

Issue	No. of	No. of Obvs.	No. of Revs.	No. of Coins Weighed	Average Weight
1. Pharnabazos Herakles/Ares ca. 385-383?	7	1	4	6	10.626
2. Pharnabazos Baaltars/Ares ca. 378/7-374/3?	90	60	74	70	10.611
3. Pharnabazos Lady/Ares ca. 378/7-374/3	124	73	107	100	10.602
4. Datames Lady/Arcs ca. 373/2-369/8	307	107	202	233	10.503
5. Datames Baaltars/Ana-Datames ca. 369/8-361/0	136	81	109	111	10.263
6. Datames Baaltars/Seated Satrap ca. 369/8-361/0	72	29	60	63	9.908

This issue bears other similarities to Pharnabazos' lady/Ares issue. Some reverses have the three olive leaves above the visor on the helmet of the reverse (Plate 2, 26). The other mint marks and variants similar to those on the lady/Ares reverses are found on the obverses of the Baaltars/Ares issue. On obverses 1-47 the tall scepter of Baaltars terminates in a lotus blossom (Plate 2, 26). Obverses 39–41 have the mint mark \$ in the field to the left of the scepter (Plate 3, 27); obverse 42 has £ (Plate 3, 28). Obverses 43-45 are distinguished by a small dolphin in the field left of the scepter (Plate 3, 29). Obverses 46-47 have a knucklebone below the diphros (Plate 3, 30). On obverses 48-57 the scepter terminates in an eagle with wings spread. Obverse 54 has a dog's head and 55 has a grape cluster in the same position under the diphros (Plate 3, 31-32). Obverse 56 shows a grape cluster in the field to the left of the scepter, but nothing under the diphros (Plate 3, 33). Number 57 is the same as obverse 56 except that it has the addition of a small Γ below the grape cluster (Plate 3, 34). On obverse 58 the scepter terminates in an owl and on 59 in a trident (Plate 3, 35-36). The four coins minted with the last obverse die are peculiar in their style and the letter forms of their legends. They may be counterfeits. Again, there is no explanation for these variants.



Since this issue has Pharnabazos' name on the reverse and the military reverse theme, we may best attribute the issue to the time of the Persian expedition ca. 378-373. The slightly heavier average weight of these staters as opposed to the lady/Ares staters may suggest this issue should be dated before the Arethusa imitation. The Baaltars may be a depiction of a cult statue at Tarsus. It resembles the great seated cult statues of Greece.

The two stater issues of Datames with Baaltars on the obverse are distinctly different from the Baaltars of Pharnabazos. In addition to the strikingly different reverse types, the average weights of these two issues are significantly lighter—10.263 and 9.908 versus 10.503 (Table). The depiction of Baaltars in the two Datames issues is also different from that minted by Pharnabazos and more similar to the Baaltars issues of Mazaios, Datames' successor as satrap of Cilicia (Plates 3–5, 30, 37–39, 51). On both Datames obverses Baaltars is surrounded by a crenellated border rather than the simple linear border used on Pharnabazos' Baaltars issue. This border has been interpreted to suggest the fortified walls of Tarsus²⁷ and may imply an atmosphere of hostility.

The heavier of the two Datames Baaltars issues shows the god enthroned to the right and his head facing (Plate 3, 37). He holds a grape cluster and an ear of wheat in his left hand and has under his right arm a long scepter terminating in an eagle with wings spread.²⁸ An incense burner is shown above the god's left arm. The Aramaic legend Baaltars is written along the left border behind the god. Baaltars wears a crown of leaves. The reverse of this issue is unique among known satrapal issues. Within a rectangle meant to depict a temple with semicircular antefixa above, stands on the left a bearded, nude, Greek-looking divinity making a pointing gesture with his upraised right arm towards a semidraped standing male figure in Greek attire who makes a gesture of submission with his right arm. Between the figures is a thymiaterion or incense burner. The figure on the right is identified by means of a small



²⁷ Kraay (above, n. 1), p. 282.

²⁸ On one obverse (no. 52) Baaltars is seated left and all the details are in mirror image to those on other obverses. Since this is the only die in which the god is seated left, it may be that this die was engraved backward by mistake. If so, this reversal is not significant. This may be just another mistake like the misspellings of the legend on some reverses which suggest haste in minting.

Aramaic inscription usually along the right leg, though in a few cases along the left leg, reading *Tadanmu*. The figure on the left is unidentified on about half of the coins, but on the other half is an even smaller Aramaic legend reading *Ana* (a variant of Anou the sky god of Uruk in Babylonia) squeezed in between the figure's right leg and the border (Plate 4, 40–49). In a few instances the legend *Ana* is written outside the lower left border (Plate 4, 50). The way in which the letters are squeezed in as an afterthought on so many dies suggests that there may have been some question about the identity of the god and that the legend was added after the first coins were minted to clarify the matter.

Most striking about this issue's reverse is the fact that the satrap is not only depicted in Greek attire, but in a crown not unlike that worn by the god opposite him. No other coin depicts a satrap in other than Persian attire and satrapal tiara. It is hard to imagine a loyal satrap portraying himself so presumptiously on coinage minted under the king's auspices. The scene in the temple suggests a bit of propaganda which Datames may have put forth to inspire loyalty to him after his revolt from the king. He may have announced that the god Ana commanded him to undertake the "liberation" of Babylonia which was then part of the king's empire. We know that Datames did cross the Euphrates and began the conquest of Mesopotamia.29 He probably intended to march to Babylon in much the way Cyrus the Younger and Alexander the Great did. Greek sources indicate that Babylon welcomed the arrival of Alexander as a liberator from Persian oppression. so It should be noted too that Datames was not Persian, but Carian. Further, Datames is said to have been adept at deceptions and what we might call public relations ploys.32



²⁹ See below, n. 47.

³⁰ Arrian 3.16.3-5, Curtius Rufus 5.1.17-36.

³¹ Nepos, *Dat.* 1.

Nepos and Polyainos emphasize Datames' cunning. Nepos (Dat. 9.3-5) reports he outwitted would-be assassins by disguising himself as a common soldier and marching among his own bodyguard. A trusted follower impersonated the satrap and when the traitors attacked the impostor, Datames killed them. Earlier, Datames had masqueraded as a peasant hunter and led the captured Paphlagonian rebel Thuys on a leash when he presented him to an amused and impressed Artaxerxes (Nepos, Dat. 3.2-5). These and other anecdotes related about Datames suggest that he was the sort of man who relished theatrics and understood how to exploit any situation for his own advantage.

The Datames Baaltars/Ana-Datames issue should therefore be redated to the period ca. 369/8-361/0 when Datames was in revolt. Not only is its iconography and average weight significantly different from the lady/Ares issue, but its die axis positions are markedly different from the other five issues. More than 50 percent of the relative die axis positions of obverse to reverse in this issue are upright while the other issues seem to be quite random. Judging by the number of surviving coins and different obverses, the number of lady/Ares coins minted is likely to have been quite adequate for the three years in which Datames was in command of the Egyptian expedition. The indications are that the Baaltars/Ana-Datames issue was substantial—136 surviving coins, 81 different known obverse dies and 109 known reverse dies. This substantial issue would have been used to pay the large numbers of Greek mercenaries who are known to have served Datames during the time of the revolt.³³

The last stater issue of Datames shows an even more dramatic loss of weight which may be associated with a phase of Datames' revolt when the amount of silver available was dwindling and the need for mercenary pay was greater. The average weight of the 72 surviving staters in this study is 9.908 g, about .6 g less than Datames' lady/Ares issue and .7 g less than Pharnabazos' issues. The indication is that this issue of 72 surviving coins, 29 known obverses and 60 known reverses, may have been smaller than the previous one.

The obverse again depicts Baaltars enthroned to the right within a crenellated border (Plate 5, 51). In this issue Baaltars always faces right, but he holds the same grape cluster and ear of wheat in his left hand and has a long scepter terminating in an eagle with wings spread. The same incense burner appears above the right arm and the Aramaic legend Baaltars is found along the border to the left behind the god. The obverses are differentiated by at least nine distinct mint marks under the diphros upon which Baaltars is seated: the forepart of a humped bull, lion seated, bucranium, forepart of a dog, forepart of an animal with



³³ Datames is said to have had only 3,000 Greek mercenaries in his employ when he fought the then loyal satrap Autophradates of Lydia (Nepos, *Dat.* 8.2), but at the end of the revolt he is said to have had 20,000 (Diod. 15.91.2).

erect ears, knucklebone, lotus blossom, another flower and the Greek letter M (Plate 5, 51-59). Two obverses have nothing below the throne and two have indistinguishable objects.

The reverse is again most unusual in its iconography. It shows a satrap in Persian attire, satrapal tiara and armor seated on a diphros to the right holding an arrow with a bow below and a winged Ahura Mazda flying propitiously above to the right. An Aramaic legend along the left side of the coin behind the satrap reads Tadanmu. The diphros upon which the satrap—no doubt meant to be Datames himself—is seated is more elaborate than that on which the god is seated on the obverse. The satrap's feet rest upon a pillow. He examines his arrow as if he intends to use it and his bow calls to mind the standard Persian imperial coins which depict the king with bow and arrow (Plate 5, 60). The Ahura Mazda for good luck completes the scene by adding Persian religious sanction and/or protection to the satrap's plans and again recalls the Persian kings with whom the same symbol so frequently and conspicuously is associated in surviving reliefs from Persepolis and Susa.³⁴

Again this iconography strongly suggests the period of the satraps' revolt. Unlike his other Baaltars staters, this issue seems to stress the legitimacy of Datames' ambitions from a Persian perspective. The satrap is shown with the bow and arrow, and Ahura Mazda is associated with the king. Other known satrapal coinages merely depict the head of the satrap in satrapal tiara, when there is any representation of the satrap at all. Many earlier satrapal portrait coins have some allusion to the king's sanction, the legend $BA\Sigma I \Lambda E\Omega\Sigma$ for instance. This bold representation of satrapal power is best attributed to the period ca. 369/8-361/0. Perhaps it should be considered the last of Datames' Cilician issues, not only because it has the lightest average weight, but



³⁴ See J. R. Hinnels, *Persian Mythology* (London, 1973), pp. 13, 50-51, 100, 103. Tiribazos minted staters with Ahura Mazda as the reverse type, but in this case the symbol was not associated with any secular motif. See *BMCLycaonia*, p. lxxviii and pl. 29, 1.

³⁵ See for instance the coins of Tissaphernes, Pharnabazos and Tiribazos in Kraay (above, n. 1), nos. 949-51, 1018 and 1027.

³⁶ E.g. Kraay (above, n. 1), nos. 949-50.

also because its reverse iconography may be meant to suggest the period of the united satrapal effort against the Persian throne.³⁷

It should be noted however that although the weight drop suggests that the issue with the seated satrap should be placed after the Ana-Datames issue, it may be that the reverse is true. Datames may have minted the lighter seated satrap issue in the earlier phase of his revolt (ca. 369/8-365) before he was joined by the other Persian satraps of Asia Minor. It may be that funds were even shorter in the early phase of the revolt.38 This shortage of silver might account for the lower weight of these coins. When he was joined by the other satraps and the wealthy king of Egypt, Tachos, he may have been able to increase the weights to a point closer to the standard set by the lady/Ares issues. Moreover, the reverse iconography of the Ana-Datames coin is best understood in the context of the Satraps' Revolt of 362/1 when Datames crossed the Euphrates. The order of these issues cannot be determined with certainty, but the significant point is that they should both be attributed to the period ca. 369/8-361/0 and not to the period of the Egyptian expedition as standard numismatic references suggest.

Several other points about these six stater issues need to be made. Many of these coins, as noted in the catalogue below, have countermarks of various sorts. Most countermarks appear on the reverse and have been identified as bankers' or civic revalidation stamps. Their true purpose remains unclear: "Due to the fact that they appear on such a wide variety of city issues, it is impossible to assign each to a specific locality [in southern Asia Minor]. The majority are recorded from the silver coins of Aspendus, but also come from issues of cities such as Byzantium, Side and Tarsus." ³⁹



³⁷ For a brief outline of the revolt see Diod. 15.90-92. Ariobarzanes of Hellespontine Phrygia joined Datames in revolt ca. 367/6 (see below, n. 43) and the other satraps of Asia Minor joined the revolt ca. 364/3 launching a united effort in 362/1 under command of Orontes of Mysia.

³⁸ We hear that at one point when he was campaigning in Paphlagonia he lacked money with which to pay his mercenaries (ps.-Arist., Oikon. 2.2.24a).

³⁹ G. G. Brunk, "The Ancient Countermarks," Numismatist 87 (1974), p. 2538; see G. F. Hill, "Notes on the Imperial Persian Coinage," JHS 39 (1919), pp. 125-27. Kraay (above, n. 1), p. 286, suggests the countermarks "have the more specific purpose of authorizing an alien coin to circulate in a particular area, and the area con-

Two of the most useful numismatic tools for dating issues (overstrikes and hoards) do not provide help in determining the dates of the staters under study. Both the Herakles/Ares issue and the lady/Ares issue of Datames contain overstruck coins. As noted above, the coins over which the Herakles head was struck cannot be identified. The two Datames' lady/Ares overstrikes can be identified, but the undertypes, coins of Side, are not dated more precisely than 394–350 B.C. These overstrikes suggest that the dating of the Side coins might be narrowed to 394–369, but this does not help date Datames' coins.

The hoard evidence is no more helpful. Cilician issues of Pharnabazos and Datames have been found in six hoards, but none of these hoards is dated precisely enough to be useful. The Karaman hoard (IGCH 1244) found in Lycaonia in 1947 contained 108 lady/Ares staters of Pharnabazos, 319 lady/Ares staters of Datames and 36 Baaltars/Ana-Datames staters together with tetradrachms from Athens, drachms from Sinope, and staters from Aspendos and Selge. This hoard accounts for a large proportion of the extant lady/Ares issues. The presence of the Datames Ana-Datames issue suggests that the date of this hoard should be adjusted to ca. 360 from the ca. 370 suggested by Mørkholm.⁴¹

IGCH 1261 found in southern Asia Minor in 1947 contained Pharnabazos and Datames lady/Ares issues along with coins of Side, Celenderis, Issos, Mallos, Soli and Lapethos. Again the date for the burial of this hoard should be adjusted slightly from ca. 375 to ca. 370 because of the presence of the Datames lady/Ares issue. IGCH 1263, found in Cilicia in 1901, contained Pharnabazos lady/Ares fractions only. A small hoard found in Babylonia contained a stater of Pharnabazos as well as staters of Mazaios and a Persian siglos (IGCH 1748). The large Oxus hoard

cerned is in some cases made explicit by the type of the punch." The seven different countermarks found on Pharnabazos' and Datames' coins cannot be assigned to definite localities by means of the type used on the punch so far as we know. Only countermark 7 may be linked to Tarsus by the Aramaic legend "Baal." Kraay notes that the countermarks do not appear on the coins of Mazaios and suggests the practice was stopped ca. 360 B.C.



⁴⁰ The coin of Side showed Athena Archegetis standing right with a pomegranate on the obverse and Apollo of Side on the reverse (*BMCPamphilia*, pl. 26, 7; *Trailé* 2, pl. 2, 16). For the dating see *Trailé* 2, col. 934.

⁴¹ Mørkholm, p. 187.

from ancient Sogdiana contained Cilician staters attributed to Tiribazos, Pharnabazos lady/Ares staters, Datames lady/Ares and seated satrap issues, staters of Mazaios and civic issues from Athens, Byzantium, Aspendus, Celenderis and Sidon as well as coins of several hellenistic monarchs (*IGCH* 1822). The Cabul Hoard (*IGCH* 1830) contained Cilician staters of Tiribazos and Datames (lady/Ares and seated satrap). Again, the presence of Datames' seated satrap issue suggests the date of burial for this hoard should be changed from ca. 380 to ca. 360 B.C.

A final point should be made about Pharnabazos' and Datames' Cilician silver stater issues. The types indicate that the reverses were more important than the obverses in carrying the message of the satraps. The obverses are either types paralleled widely among other Greek mints or are representative of the local patron diety of Tarsus. It is the reverse which bears the satrap's legend and, especially in Datames' two later issues, the satrap's propaganda.

HISTORICAL SIGNIFICANCE

These numismatic findings help to elucidate a period of history which is very poorly documented by literary and epigraphical evidence. The fact that Pharnabazos' lady/Ares issue is immediately succeeded by and joined to Datames' lady/Ares issue confirms the rather weak literary evidence of Cornelius Nepos' Datames (3.5) which indicates that King Artaxerxes II of Persia replaced Pharnabazos with Datames as commander of his armies against Egypt. Pharnabazos' Baaltars and lady/Ares issues were probably minted in large part to pay his 20,000 Greek mercenaries and the Athenian mercenary general Iphikrates as well as to defray other military expenses incurred in launching the ill-fated Egyptian expedition of 373. The bullion for these large issues would have been provided by the Persian treasury and/or by Cilician mines.

More significant are the findings concerning the three stater issues of Datames. One might well question the attribution of three large stater issues to Datames during his command of the Egyptian expedition which cannot have exceeded three or four years and never reached Egypt. Only two possibly smaller stater issues were sufficient for Pharnabazos' command of five or more years including the expensive operations of the



failed assault on Egypt in 373. Careful examination of the numismatic evidence and the iconography of Datames' two Baaltars issues makes it likely that these issues should be redated to the period of his revolt ca. 369/8 to 361/0. This redating changes our picture of the relative importance of Datames in the Great Satraps' Revolt.

The Greek sources, especially Diodoros who provides the only narrative account of the revolt, tend to emphasize the roles of the satraps Orontes of Mysia and Ariobarzanes of Hellespontine Phrygia whose territories lay closer to the Greek mainland. Datames was the first of the satraps to revolt in this period and was probably the last to be subdued. His military prowess and imaginative maneuvers won him a biography in Nepos' *Lives* and several notices in Polyainos' *Strategems*, but the details of his actions during the revolt are not clear.

We hear that Datames was the son of a Carian, Camisares, who was governor of Cilicia. He had begun his career as a palace guardsman of Artaxerxes II and won advancement through military service. When his father fell in battle, Datames was appointed to govern his father's province. He continued to win the king's confidence through campaigns against rebellious subordinates of the king such as Thuys of Paphlagonia. As a result, when Pharnabazos failed to recover Egypt in 373, Datames was appointed commander of this most important expedition. Datames, like his predecessor, used Cilicia and its capital Tarsus as a staging center for the large force he gathered at Ake in Palestine.

While completing preparations at Ake (ca. 371/0), a rebellion broke out against the king led by Aspis of Cataonia, a territory north of Cilicia and south of Cappadocia. Despite the importance of the Egyptian expedition which was nearly ready to go forward, the king ordered Datames to put down Aspis and Datames returned to Tarsus by ship whence he quickly succeeded in subduing the rebellion. Meanwhile the king changed his mind and countermanded his order to Datames, but was pleased to learn that Datames had quickly put down the revolt. The speed of this operation combined with the king's growing confidence in this non-Persian is said to have produced animosity toward him among jealous Persian courtiers.



⁴² This account of Datames' career is based on Nepos' biography except where otherwise noted.

Nepos tells us that Datames was warned by a letter from his friend the keeper of the royal treasure that he would be in great danger if the Egyptian expedition should fail. The letter reached Datames after he had returned to Ake. Then and there Datames decided to revolt from the king and returned to Cilicia whence he marched north taking control of Cappadocia and Paphlagonia thus cutting off the land routes from Persia to the other satrapies of Asia Minor. This beginning of the revolt is best dated ca. 369/8. Nepos says Datames thereafter came to a secret understanding with Ariobarzanes. We know that Ariobarzanes was openly in revolt from the king by early 366.43 Dating backward and allowing time for Ariobarzanes' preparations for revolt, the secret agreement might well be dated 367/6. Again allowing time in between for Datames' conquests of Cappadocia and Paphlagonia, one arrives at ca. 369/8 as the date for the beginning of this revolt.

It was probably during that conquest of Paphlagonia that Datames took control of Sinope on the Black Sea. The only coins of Datames presently dated to the period of the revolt are the silver drachms of Sinope with standard civic types—the nymph Sinope on the obverse and an eagle grasping a dolphin with its talons on the reverse (Plate 5, 61). These coins have the legend Δ ATA, Δ ATAM or Δ ATAMA in place of the usual civic Σ IN Ω . This issue shows strong similarities to the civic issues of Sinope including examples with the same monogram A Π O and the same ligature Π which appear on autonomous civic issues. These coins should be dated ca. 368–361 (and an earlier date in that period seems more likely since Datames was in Sinope ca. 368–367). There is no indication that these coins were minted in large quantities or were intended for other than local purposes.

We are told that Datames, at some point during his campaigns, lacked money with which to pay his troops and resorted to a strategem.⁴⁵ He had his troops plunder temples and ordered the silver objects sent



⁴⁸ Dem. 15.9 reports that the Athenian general Timotheos was sent out in early 366 to aid Ariobarzanes provided he was not in open revolt. However, when he arrived, Ariobarzanes was indeed in open rebellion. For the date of Timotheos' mission, see *IG* II² 108, *Ath. Pol.* 44.4 and J. K. Davies, "The Date of *IG* II² 1609," *Historia* 18 (1969), pp. 328–29.

⁴⁴ Traité 2, cols. 415-23 and 1522-28.

⁴⁵ Ps.-Arist., Oikon. 2.2.24a.

ahead to Amisos on the Black Sea coast southeast of Sinope to be minted. No known coins of Amisos bear any indication of Datames' intervention. If pseudo-Aristotle's account of this incident were incorrect in the mint named, the Sinope coins might be those minted on that occasion.

Datames probably returned to Cappadocia after his campaign in the north. There he faced troops loyal to the king under the command of Autophradates, satrap of Lydia. Autophradates, making no progress in his efforts to subdue Datames, urged reconciliation. Datames is reported to have been skeptical, but agreed to send envoys to the king to discuss peace. Autophradates then departed, probably to hasten to the west to deal with Ariobarzanes' revolt in Hellespontine Phrygia ca. 366/5.46

Nothing further is known about Datames' activities between 366 and 360 except that he crossed the Euphrates and fought against the king's forces in northern Mesopotamia.⁴⁷ He is said to have had 20,000 mercenaries in his employ. In the end Datames was himself tricked and murdered by Mithridates, son of Ariobarzanes.⁴⁸

One last coin issue may be attributable to Datames in the time of the revolt. A hoard found in Judaea in 1930 produced two very small silver coins with imitation Attic types. On the obverse is a crude head of Athena right and on the reverse is Athena's owl and an olive sprig with the legend AOE. Underneath the legend, in Aramaic, are four letters which have been interpreted variously. E. T. Newell read MNPT on the specimen which is now in the ANS. C. Lambert suggested MNRT and associated the Greek name Mentor with this reading. The Rhodian mercenary general Mentor is well known for his service under Artaxerxes III and his successful expedition against Egypt in 343. Historically this interpretation would make sense. A mint producing Attic imitations is known at Gaza for instance and there were probably others in the area of Pales-

⁴⁶ Diod. 15.90.3, 91.2; Trogus, Prol. to Book 10; Dem. 15.9; Isok. 15.111-12.

⁴⁷ Poly. 7.21.3, see Olmstead, pp. 420-21.

⁴⁸ Diod. 15.91.2.

⁴⁹ SNGANS Palestine 24, and C. Lambert, "Egypto-Arabian, Phoenician, and Other Coins of the Fourth Century B.C. Found in Palestine," QDAP 2 (1932), p. 5, no. 4.

⁵⁰ E. T. Newell, Miscellanea Numismatica: Cyrene to India, ANSNNM 82 (New York, 1935), no. 25.

⁵¹ Lambert (above, n. 49), p. 5.

⁵² Olmstead, pp. 414, 421, 436-37, 440, 486-87, 502.

tine or Phoenicia near where the coin was found.⁵³ A linguistic problem calls Lambert's interpretation into question however. It is necessary to transpose the last two letters in order to obtain the reading. One might question whether such a transposition is legitimate.

Meshorer in publishing the ANS coin (SNGANSPalestine 24) suggested the legend should be read retrograde TDNM and understood this to mean Tadanmu the Aramaic version of the Greek name Datames. The Aramaic lettering is not skillfully inscribed. This makes it hard to read the second and third letters which are poorly formed. Although it is also necessary to read the Aramaic legend upside down (with respect to the Greek legend) as well as retrograde in order to achieve Meshorer's reading, it seems likely that he is correct. If so, this is an important new addition to the coin types of Datames. It would parallel the Attic imitations issued by Tachos of Egypt, Datames' ally in the time of the Satraps' Revolt. The two known examples of the coin weigh .74 and .79 g making this a small denomination, but such coins might have been minted for payment to Datames' Greek mercenaries. Several smaller denominations of the lady/Ares coins are known.⁵⁴ That these two coins were found in Judaea is not surprising since Datames' forces did invade Syria and Tachos' men are known to have occupied parts of Phoenicia and Syria. If Meshorer's reading of the legend is correct, we should date the coin ca. 362-360 B.C.

Of the five satraps involved in the Satraps' Revolt, only Datames' coins show any indication of this troubled time. No coinage is attributed to Ariobarzanes. Only a few small bronzes and silver trihemiobols with the head of a satrap on the obverse and the legend OATA on the reverse have been assigned to Autophradates on the assumption that OATA stands for a variation of his name in Greek OATAΦPAΔATHΣ.⁵⁵ The coinage of Mausolos of Caria is more impressive judging by the number of surviving examples, but none of his coins can be singled out as indicative of the era of the revolt.⁵⁶



⁵³ Kraay (above, n. 1), pp. 292-93.

⁵⁴ Traité 2, col. 395, nos. 590-93; col. 410, no. 608.

⁵⁵ Traité 2, 122-24; BMCIonia, p. 327, nos. 19-20, and pl. 31, 12-13.

⁵⁶ Silver drachms and tetradrachms attributed to the mint of Halikarnassos have a facing head of Apollo on the obverse and a standing figure of Zeus with a double-headed ax and the legend MAYSSOAAOS on the reverse. Various Greek letters

The coins of Orontes of Mysia have recently been reassessed. Unprepossessing silver and bronze issues are now attributed to the mints of Adramyteion and Kisthene.⁵⁷ Nine known silver tetraobols or hemisigloi with a Greek hoplite kneeling on the obverse and a winged boar with the legend OPONTA on the reverse were probably minted at Kisthene. The motif of the obverse is martial and may be associated with the revolt, though this cannot be proven.⁵⁸ The gold staters of Lampsakos attributed to Orontes have sparked some controversy among numismatists. 59 Babelon argued that these staters with the portrait of a satrap in satrapal tiara on the obverse represent "un monnayage insurrectionnel" since he thought gold coins were not issued by loyal satraps without some reference to the king.60 The fact that these coins lack any legend makes it possible to question the attribution to Orontes. The similarity of these coins to the standard civic issues of Lampsakos suggests that they may have been minted by the city at the time of the Satraps' Revolt. We know that the Greek cities of the coast took part in the rebellion.⁶¹ The absence of a legend makes it impossible to be sure who ordered the minting of these staters, but it seems odd that they should be assigned to Orontes for two reasons. First, he was satrap of Mysia but Lampsakos was in the satrapy of Hellespontine Phrygia. 62 Second, one would expect

and monograms appear on the reverses of these coins and may distinguish moneyers or issues. None of these can be associated specifically with the era of the revolt though Mausolos is said to have been most inventive in extorting money from his subjects (ps.-Arist., Oikon. 2.2.13-14, compare Olmstead, p. 415). Very little is known with certainty about Mausolos' role in the revolt, see S. Hornblower, Mausolus (Oxford, 1982), pp. 172-82.

- ⁵⁷ H. A. Troxell, "Orontes, Satrap of Mysia," SNR 60 (1981), pp. 27-37.
- ⁵⁸ Orontes was reportedly the commander-in-chief of the Satraps' Revolt and was said to have enough money to pay 20,000 mercenaries for a year (Diod. 15.91.1).
- 59 A. Baldwin (Brett), "Lampsakos: The Gold Staters, Silver and Bronze Coinages." AJN 53 (1924), pp. 16, 25-26, 47; Traité 2, cols. 107-10; Troxell (above, n. 57), pp. 27, 35-37.
- 60 Traité 2, 114, compare M. J. Osborne, "Orontes," Historia 22 (1973), pp. 517 and 541.
 - 61 Diod. 15.90.3.
- 62 Troxell (above, n. 57), pp. 27, 35-37; compare M. J. Osborne, "The Satrapy of Mysia," Grazer Beiträge 3 (1975), pp. 291-309.



that Orontes would have wanted his name on the coins if they were in fact minted on his orders.

In conclusion, while the numismatic evidence is helpful in broadening our knowledge of the careers of Pharnabazos and Datames to some extent, at present the evidence is far from complete. There is every reason to suppose that much more evidence is lost. A ratio of six coins per obverse die is needed to attempt an approximation of the total number of coins in each issue. For Pharnabazos' and Datames' coins we have only a ratio of 2:1 or 3:1 (except for the few surviving examples of the Pharnabazos Herakles/Ares issue). Our conclusions are therefore tentative. The survival of only two unique coins of the Egyptian King Tachos is surprising. Of all the allies in the Satraps' Revolt, Tachos is reported to have expended the largest sums of cash and is said to have been advised on money matters by the Athenian general Chabrias.63 If the suggested redating of Datames' Baaltars issues is correct, he is the only satrap involved in the revolt known to have minted substantial issues for that effort. Perhaps Datames minted staters for the united satraps' assault on Persia in 362/1 using Tarsus as a staging point just as it had been used by Pharnabazos when he was preparing his expedition against Egypt and by Datames himself when he replaced Pharnabazos. The alternative is to suppose that the satraps and King Tachos relied on Greek civic and imperial Persian coinages to supply the coins with which they paid their troops. The fact that a high percentage of the surviving Pharnabazos and Datames lady/Ares issues is due to the discovery of one hoard (IGCH 1244) suggests that a similar find might change the present picture considerably.

63 For the coins of Tachos see Kraay (above, n. 1), p. 76, 216–17 and Jenkins (above, n. 1), p. 141, fig. 334. The Attic types do not indicate Athenian involvement in the revolt as Tarn (CAH 6, p. 21) suggested. See R. A. Moysey, "The Date of the Strato of Sidon Decree," AJAH 1 (1976), p. 184. Tachos sent 500 talents of silver and 50 warships to the satraps, fitted out 200 triremes, hired 10,000 chosen Greek mercenaries (including 1,000 Spartans) and employed two famous Greek generals—Chabrias of Athens and King Agesilaus of Sparta who was reportedly paid 230 talents for his services (Diod. 15.92; Plut., Ages. 36–40; Xen., Ages. 2.28–31, 40; Nepos, Ages. 8; ps.-Arist., Oikon. 2.2.25). For Chabrias' financial advice to Tachos see ps.-Arist., Oikon. 2.2.25, compare Olmstead, pp. 418–19.



CATALOGUE

The obverses are arranged according to the observations about the general order suggested by the characteristics of each issue as set forth in the text. In many cases it is not possible to determine with certainty the order of obverses beyond the general guidelines set forth above. In some instances die links can be used to establish the sequence. Likewise the reverses are arranged arbitrarily except where die links or obverse wear can determine an order. A description of the countermarks follows the catalogue.

PHARNABAZOS

1. Herakles/Ares

Obv. Aramaic inscription, KLK = Cilicia. Head of Herakles in lion's scalp.

Rev. TEPSIKON Head of Ares l.

- 1. a. ANS, $10.26 \downarrow = BMCLycaonia$, pl. 29, 6, $10.695 \uparrow$
 - b. ANS, 10.71 \(= \text{M\u00fcnzhandl.} \) Basel 10, 15 Mar. 1938, 360 (Plate 2, 25); Glendining, 25 Nov. 1953, 100
 - c. SNGvAulock 5926, 10.65, cmks: 1, 2, 3 on rev.; SNGCop 272, 10.79 1
 - d. Bank Leu 7, 9 May 1973, 262 = Grabow 14, 27 July 1939, 507 = Robert Ball FPL 39, 1937, 615, 10.65

2. Baaltars/Ares

- Obv. Aramaic inscription, BALTRZ = Baaltars. Baaltars semiclothed seated l. on diphros; in r. hand, tall scepter terminating in lotus blossom at top.
- Rev. Aramaic inscription, PRNBZW = Pharnabazos to l., KLK = Cilicia to r. Ares l., in Attic helmet with three part crest and movable double visor.



- a. Münz. u. Med., 18–19 June 1970, 274 = Leu-Münz. u. Med.,
 3–4 Dec. 1965 (Niggeler), 442, 10.85
- 2. a. K. Kress 152, 5 July 1971, 258, 10.35
- 3. a. Hirsch 21, 16 Nov. 1908 (Weber), 3889, 10.52
- 4. a. Vecchi & Sons 8, Feb. 1973, 19
- 5. a. Münz. u. Med. FPL 327, Sept. 1971, 6 = Münz. u. Med. FPL 303, Aug. 1969, 18, 10.62
- 6. a. Kricheldorf 7, 12-13 Nov. 1959, 94, 10.75
- 7. a. Berlin (Löbbecke), 10.91
- 8. a. Knobloch FPL 21, Spring 1961, 166
- 9. a. SNGvAulock 5927, 10.82
- 10. a. Parke-Bernet, 16-17 Oct. 1968 (Newell), 193
 - b. Münz. u. Med. FPL 292, Sept. 1968, 24, 10.61, *Pharnabazu* misspelled 71947
- 11. a. Ratto, 16-17 May 1935, 46, 10.15 (same rev. as 10b)
- 12. a. Kricheldorf 2, 28-29 May 1956, 1111, 10.65
- 13. a. G. Hirsch 31, 28-30 May 1962, 178
- 14. a. G. Kastner 12, 30 Nov. 1976, 133, 10.70 ↓
- 15. a. Kölner Münzhandl. 5-7 Nov. 1970, 66, 10.65
- 16. a. Peus 264, 1-3 Oct. 1963, 2806; Auctiones Basel 8, 27-28 June 1978, 324
- 17. a. Hirsch 48, 22-24 June 1966, 246 = Hirsch 24, 28-30 June 1960, 129, 10.65 (same rev. as 16a)
- 18. a. Paris 169, $9.42 \rightarrow$
- 19. a. Bourgey, 9-10 Nov. 1976, 91 = Peus, 30 Oct.-2 Nov. 1972, 202, 10.78; Münz. u. Med. 3, 4-5 Dec. 1973, 192, 10.61
 - b. K. Kress 116, 28 Oct. 1960, 417, 12.8; SNGBerry 1286, 10.93
 - c. Giessener Münz. 24, 14–15 Mar. 1983, 88
- 20. a. Hirsch 89, 8-9 Oct. 1974, 697, 10.61; Münz. u. Med. FPL 141, Dec. 1954, 31, 10.66
- 21. a. NFA 10, 17-18 Sept. 1981, 216, 10.49
- 22. a. ANS, 10.70 \(\), cmk: 4 on rev.
- 23. a. BM, 10.49 ↓
- 24. a. Superior, 4–8 June 1979 (M. Munoz), 1408
- 25. a. Coin Galleries, 19 Apr. 1962, 930
- 26. a. $BM = SNGvAulock 5928, 10.76 \perp$
- 27. a. 's Gravenhage 1949/63, 9.30 ←



- Obv. As above; horizontal line below diphros.
- 28. a. De Luynes 2832, 10.39 \; Hirsch 37, 10-11 Dec. 1963, 280
 - b. Galleries des Monn., 25 June 1976, 728, 10.61; E. Button, 2-3 Oct. 1958, 61
 - c. Harmer, Rooke, 4-5 Oct. 1972, 110, 10.87; Kricheldorf 9, 12 June 1961, 247, 10.73
- 29. a. Münz. u. Med. FPL 259, Aug. 1956, 14; SNGvAulock 5929, 10.73
 - Obv. As above; horizontal line below diphros lacking.
- 30. a. Rasmussen, 10–12 Mar. 1970, 834 = Glendining, 25 Nov. 1953, 99 = Hesperia Art, 23 Apr. 1953, 138, 10.66; Sotheby, 7 May 1975, 150, 10.69
- 31. a. Glendining, 1 Dec. 1927, 654, 9.60 (same rev. as 30a)
- 32. a. Superior, 24-26 Sept. 1970, 238
 - Rev. Aramaic inscription, KLK = Cilicia, missing. Type as above.
- 33. a. J. Schulman, 19 Nov. 1968, 182 = Münz u. Med. FPL 228, Jan. 1963, 14, 10.75
- 34. a. Ciani, 1935 (Grandprey), 187 = Ciani, 1925 (Allotte de la Fuye), 615, 10.05
 - Rev. Aramaic inscription, PRNBZW = Pharnabazos l., KLK = Cilicia r. Type as above; 3 olive leaves above visor on helmet.
- 35. a. G. Kastner 10, 18 May 1976, 89, = G. Kastner 6, 26–27 Nov. 1974, 170, 10.71; Glendining, 11 Dec. 1974, 82
- 36. a. SNGvAulock 5932 = Münz. u. Med., 2-3 Dec. 1975, 10.64 (Plate 2, 26)
 - b. Berlin (Imhoof-Blumer), 10.61 /
 - c. Peus 283, 15 -16 May 1974, 138, 10.54
- 37. a. Münz. u. Med. FPL 265, June 1966, 24, 10.52
- 38. a. Frankfurter Münzhandl. 109, 2-4 Dec. 1963, 2140, 10.76
 - Obv. As above; to l. of scepter, ?.
 - Rev. As 1a-32a above.
- 39. a. Bank Leu 7, 9 May 1973, 263 = H. Frey, 15-16 Apr. 1955, 1170, 10.83



- b. SNGBerry 1288, 10.84 \(^(Plate 3, 27))
- 40. a. SNGvAulock 5931, 10.42 \[\]
- 41. a. ANS, 10.89
 - Obv. As above; to l. of scepter, £.
- 42. a. BM = SNGvAulock 5930, 10.67 \uparrow (same rev. as 32a; Plate 3, 28)
 - b. Hess-Leu 31, 6-7 Dec. 1966, 397 = Hesperia Art 6, 34, 10.72
 - Obv. As above; to l. of scepter, dolphin.
- 43. a. SNGvAulock 5933, 10.48 † (Plate 3, 29)
 - Rev. As 33a-34a.
- 44. a. K. Kress 158, 8-9 Nov. 1973, 470
- 45. a. Peus 261, 20 June 1960, 829, 10.89
 - Obv. As above; mint mark lacking; below diphos, knucklebone.
- 46. a. Berlin (Fox), 10.79 1
 - Münz. u. Med. FPL 278, July 1967, 21, 10.80; Coin Galleries,
 21 Nov. 1974, 513; ANS = SNGBerry 1287, 10.78 ↓ (Plate 3, 30)
 - c. Coin Galleries, 14 Feb. 1973, 44, 10.67
- 47. a. Münchner Münzhandl. 165, 29–30 Mar. 1976, 402
 - b. De Luynes 2833, 10.26 ↑
 - Obv. As above, scepter surmounted by an eagle with wings spread; no mint marks.
 - Rev. As 1a-32a and 39a-41a.
- 48. a. Monn. et Méd. Basel 54, 26 Oct. 1978, 344 = Münz. u. Med. FPL 257, Sept 1965, 23, 10.56
- 49. a. Münz. u. Med. FPL 315, Aug. 1970, 3, 10.91
- 50. a. 's Gravenhage 6495 (Six), 10.45 ✓
- 51. a. E. Gans 30, Fall 1963, 7454
- 52. a. Ciani, 1925 (Allotte de la Fuye), 614, 10.50
- 53. a. Weber 7618, 10.81 \ \
 - Obv. As above; below throne, dog's head (?)
- 54. a. ANS, 9.66 \(\(\) (Plate 3, 31)
 - b. McClean 3, pl. 328, 7, 10.30 \leftarrow



- Obv. As above; below throne, grape cluster.
- 55. a. ANS, 10.65 ✓
 - b. BM, 10.41 † (Plate 3, 32)
 - Obv. As above; to l. of scepter, grape cluster.
- 56. a. E. Gans, 19 Apr. 1960 (Bauer), 383; G. Hirsch 48, 22-24 June 1966, 247 = Hirsch 26, 11-13 Jan. 1961, 1794 = Kricheldorf 4, 7 Oct. 1957, 348, 10.51 (Plate 3, 33)
 - Obv. As above, below grape cluster, Γ .
- 57. a. Coin Galleries, 15 Oct. 1955, 409 (Plate 3, 34)
 - Obv. As above, scepter surmounted by owl; no mint marks.
- 58. a. Jameson 1, 1613 = Myers-Adams 5, 15-16 Mar. 1973, 239, 10.21 (Plate 3, 35)
 - Obv. As above; scepter surmounted by trident.
- 59. a. Hirsch 13, 1905 (Rhousopoulos), 4365, 10.9; Paris 172 = Traité, pl. 108, 3, 11.49 ↑; Berlin (Löbbecke), 1106, 11.04 ↑; ANS, 10.62 ↑ (Plate 3, 36)
 - Obv. As above, scepter surmounted by uncertain object.
- 60. a. Winterthur 4663, $10.08 \rightarrow$

3. Lady/Ares

- Obv. Female head facing, inclined to l., wearing sphendone, multipendant necklace and earring(s) (only l. shows); small dolphin in curls at lower l.; smooth, linear border.
- Rev. Aramaic inscription, KLK = Cilicia, and KIAIKION

 Ares 1. in Attic helmet with three-part crest and movable double visor.
- 1. a. BM, 10.65 / (Plate 1, 7), from IGCH 1261



- Rev. As above except edge of visor turned upward.
- c. Paris 175a = Traité, pl. 108, 6, 10.88 \; ANS, 10.48 \; Naville 14, 2 July 1929 (Churchill), 405 = Naville 1, 4 Apr. 1921 (Pozzi), 2847 = Jameson 4, 2603, 10.46
- 2. a. Hunter 2, pl. 60, 8, 10.60
 - Rev. Aramaic inscription, PRNBZW = Pharnabazos. Type as 1a-b.
- 3. a. 's Gravenhage (v. Rede) 2648, 9.48 \(\frac{1}{3}\)
- 4. a. McClean 3, pl. 328, 6, 9.68 \(\dagger
- 5. a. SNGvAulock 5917, 10.46
 - Rev. Aramaic inscription, PRNBZWKLK = Pharnabazos Cilicia, to r. Type as above, helmet with pointed visor and hook protruding above, cheekpiece has griffin's head.
- 6. a. ANS, 10.71 \(\cdot, IGCH \) 1244 (Plate 1, 5)
- 7. a. Berlin 21 109, 10.635 \(\cdot \)
- 8. a. SNGvAulock 5916, 10.82
 - b. K. Kress 153, 3–5 Nov. 1971, 339, 10.60, cmk: 6 on rev.
- 9. a. ANS, 10.76 /, IGCH 1244; Spink 4, 10-11 Nov. 1983, 519, 10.43
- 10. a. $SNGCop\ 271,\ 10.81 \rightarrow,\ IGCH\ 1244$
 - b. ANS photo file "lot 611" (information lost)
- 11. a. SNGCop 266, 10.72 \,\tau, IGCH 1244, cmk: 5 on rev.
- 12. a. ANS, $10.53 \leftarrow$, *IGCH* 1244
 - b. Berlin (Imhoof-Blumer), 10.66 ←
 - c. Weber 7617 [N.B. the reverses of Weber 7617 and 7624 are transposed on plates] = Naville 5, 18 June 1923 (BM dupl.), 2732, 10.03
 - d. SNGBerry 1289, 10.27 \(\sqrt{} \)

Rev. As above; to l., \P .

- e. BM, 10.38 \
- f. Berlin (Imhoof-Blumer), 10.82
- g. $BM = SNGvAulock 5918, 10.70 \leftarrow$
- h. Paris 174, 10.47 1



- Rev. As 6a-12d above; 3 small diagonal lines in lower r. corner of helmet.
- 13. a. Klenau 74, 5 May 1973, 177
- 14. a. Bank Leu 18, 5 May 1977, 240, 10.49 \
- 15. a. NFA 10, 17-18 Sept. 1981, 215, 10.30

Rev. As 12e-h above.

- 16. a. Cahn, 15 Oct. 1929, 228, 10.65
 - b. R. Myers, Anc. Coins, 58
- 17. a. Glendining, 11 Dec. 1974, 79; Schulman, 19-20 Mar. 1973, 67
 - Obv. As above, dolphin lacking.
 - Rev. As 3a-5a above.
- 18. a. SNGCop 270, 10.73[†], IGCH 1244
 - Rev. Aramaic legend, PRNBZWKLK = Pharnabazos Cilicia to 1. Type as above.
- 19. a. Paris R2967, 10.79 1, IGCH 1244
- 20. a. Coin Galleries, 15 Nov. 1979, 116
- 21. a. E. S. G. Robinson, Catalogue of Ancient Greek Coins Collected by Godfrey Locker Lampson (London, 1923), 336, 10.31
- 22. a. Christensen 67, 7 July 1978, 167, 10.72
- 23. a. Glendining, 21 June 1972, 284, 10.77
 - b. H. J. Berk FPL 2, Fall 1974, 119
- 24. a. Berlin 340/1874, 10.365 †
- 25. a. *BMCLycaonia*, pl. 29, 2, 10.06 †
 - Rev. Aramaic inscription PRNBZW = Pharnabazos to l. Type as above.
- 26. a. Federal Coin Exchange, 17-21 Aug. 1954, 2301
- 27. a. Bank Leu 7, 9 May 1973, 264 = Hess-Leu, 24 Mar. 1959, 283, 10.80
 - b. Hess-Leu 31, 6-7 Dec. 1966, 498 = Naville 12, 18-23 Oct. 1926 (Bissen), 1918, 10.64
 - c. Coin Galleries, 15 Oct. 1956, 410
- 28. a. $BM = SNGvAulock 5921, 10.75 \uparrow (Plate 1, 8)$
- 29. a. SNGBerry 1290, 10.74 ←
 - b. SNGvAulock 5920, 10.37 1



- Rev. Aramaic inscription, PRNBZW = Pharnabazos to l. Head of Ares r. in Attic helmet with five-part crest.
- 30. a. Münz. u. Med. 61, 7-8 Oct. 1982, 163, 10.67; Berlin (Imhoof-Blumer), 10.695 /
- 31. a. $SNGCop\ 265,\ 10.66 \rightarrow,\ IGCH\ 1244$
- 32. a. SNGDelepierre 2876, 10.22 /
- 33. a. BM = SNGvAulock 5922, 10.78 f
 - Rev. Aramaic inscription, PRNBZW KLK = Pharnabazos Cilicia to l. Type as above.
- 34. a. Paris 180b = Waddington 4563 = Traité, pl. 108, 12, 10.76 \uparrow
- 35. a. Münz. u. Med., 11-12 Feb. 1971, 119
 - b. Christensen, 9 July 1965 (Parsons), 77, 10.64
 - c. ANS, 10.79 \, *IGCH* 1244
 - d. London, 10.19 ↑
 - e. Peus 301, 25–27 May 1981, 444 = K. Kress 155, 3 Oct. 1972, 398 = K. Kress 116, 28 Oct. 1960, 418
 - f. Stack's, 17-18 Sept. 1980, 177 = G. Hirsch 25, 28-30 Sept. 1960, 1775, 10.45
 - Rev. Aramaic inscription, PRNBZW = Pharnabazos to l. Type as above, three olive leaves above visor of helmet.
- 36. a. SNGBerry 1291, 10.73 ↓, cmk: 3 on rev.
- 37. a. Kricheldorf 14, 7-8 July 1964, 129, 10.74
- 38. a. BM = $SNGvAulock\ 5924$, $10.65 \leftarrow$, cmk: 7 on rev.
 - b. $BM = SNGvAulock 5923, 10.61 \downarrow$
- 39. a. Salton-Schlessinger, 2 Feb. 1954, pl. 1, 14
- 40. a. Stack's, 19-20 June 1969 (Fowler), 178, 10.80
 - Rev. Aramaic inscription, PRNBZWKLK = Pharnabazos Cilicia to l. Type as above.
- 41. a. 's Gravenhage 1949/64, 10.65 / (Plate 1, 9)
- 42. a. Ancient Coins 8, 1974/5, 65 = Ancient Coins 6, 1974, 93
 - *Rev.* As above, to r., \P .
- 43. a. Berlin (Löbbecke), 10.415 ←; Naville 15, July 1930, 1043, 10.00



- b. SNGCop 264, 10.60 / IGCH 1244
- c. BM, $10.70 \rightarrow$
- 44. a. BM, 10.64 ✓
- 45. a. SNGBerry 1292, 10.80 \(\sqrt{2} \)
 - Rev. Aramaic inscription, PRNBZWKLK = Pharnabazos Cilicia to l. Ares l. wearing Attic helmet with three-part crest and movable double visor; to r., $\frac{4}{7}$.
- 46. a. SNGCop 267, 10.73 ↑ IGCH 1244
 - b. SNGCop 268, 10.53 ← IGCH 1244
- 47. a. Paris R2968, 10.70 f, cmk: 6 on rev. IGCH 1244
- 48. a. Coin Galleries, 20 Apr. 1961, 141
- 49. a. Spink, 15-16 Feb. 1977, 150 = Glendining, 11 Dec. 1974, 80, 10.65
 - Obv. As above; dotted border.
- 50. a. ANS, $10.74 \rightarrow$, *IGCH* 1244 (Plate 1, 10)
 - Rev. As 36a-40a above.
- 51. a. E. Gans, 19 Apr. 1960 (Bauer), 382
 - Rev. As 34a-35f above; to r., $\frac{4}{3}$.
- 52. a. BM, $9.45 \leftarrow$
- 53. a. $SNGCop\ 262,\ 10.65 \leftarrow IGCH\ 1244$
 - Rev. As 43a-45a above; to r., \$.
- 54. a. Paris R2969, 10.74 † *IGCH* 1244
- 55. a. Winterthur 4662, 10.80 \(\psi; \) Münz. u. Med. 3, 4-5 Dec. 1973, 191, 10.70
- 56. a. SNGvAulock 5925, 10.69
 - b. BMCLycaonia, pl. 29, 3, 10.72 **/**; Kölner Münzkabinett 24, 16–17 Oct. 1978, 127, 9.94
 - c. Sotheby, 23 Mar. 1896 (Montagu), 659, 10.695
 - Rev. As above; to r., 🕏 .
- 57. a. K. Kress 158, 8-9 Nov. 1973, 469
 - b. Myers-Adams 6, 6 Dec. 1973, 216, 10.42, cmk: 7 on rev.



- 58. a. Paris 17, $9.34 \rightarrow$; de Luynes 2834, $8.90 \neq$; Joel Malter 25, 1970, 100
- 59. a. SNGCop 263, 10.82 \ IGCH 1244; Naville 1, 4 Apr. 1921 (Pozzi), 2846, 10.13; ANS, 10.89 \ IGCH 1244 (Plate 1, 11)

Rev. As above; to r., 8.

60. a. ANS, $10.75 \rightarrow (Plate 1, 12)$

Rev. As above; to r., 8.

- 61. a. ANS, 10.12 \(\sqrt{\text{Plate 1, 13}} \)
 - Rev. Aramaic inscription, PRNBZW = Pharnabazos to l. Head of Ares r. in Attic helmet with three-part crest and pointed visor with hook protruding above; to r., \(\begin{align*}{2} \end{align*} \).
- 62. a. $SNGCop\ 261,\ 10.72 \leftarrow IGCH\ 1244$
- 63. a. Berlin (Fox), 9.04 \(\sqrt{} \)
 - Rev. Aramaic inscription, PRNBZW = Pharnabazos to r. Head of Ares r. in Attic helmet with three-part crest and movable double visor.
- 64. a. Coin Galleries, 19 Apr. 1962, 931
- 65. a. K. Kress 158, 8-9 Nov. 1973, 474
- 66. a. Naville 12, 18-23 Oct. 1926 (Bissen), 1920, 10.20
- 67. a. Dewing Coll. (lost in theft)

Rev. As above; except MA? on helmet above visor.

- 68. a. Münchner Münzhandl. 184, 9-10 Nov. 1982, 633, cmk: 7 on rev. (Plate 1, 14)
 - Rev. As above; AM on helmet above visor.
- 69. a. Ciani, 12 Dec. 1921, 81 (Plate 2, 15)
 - Rev. Aramaic inscription, PRNBZWKLK = Pharnabazos Khilik to r. Head of Ares l. in Attic helmet with three-part crest and pointed visor with hook above, to l., #.
- 70. a. ANS, 10.66 ↑ *IGCH* 1244



- Rev. Aramaic inscription, PRNBZW(KLK?) = Pharnabazos (Khilik?) to r. Type as 46a-49a; to r., #?
- 71. a. K. Kress 152, 5 July 1971, 262, 10.15

OBVERSES USED BY PHARNABAZOS AND DATAMES

- Rev. As 70a above.
- 72. a. Ball 6, 9 Feb. 1932, 366 = A. Hess, 18 Mar. 1918, 722 = Hirsch 25, 29 Nov. 1909 (Philipsen), 2759, 10.20
 - Rev. Aramaic inscription, PRNBZWKLK = Pharnabazos Khilik to l. Type as 62a-63a above, to r., ♣.
 - b. MFA (Warren 1267), 10.63 (Plate 1, 1)
 - Rev. Aramaic inscription, TDNM = Datames to l. Head of Ares l. in Attic helmet with three-part crest, pointed visor and hook above, three small diagonal lines at lower r. corner of helmet (hereafter referred to as Var. 1).
 - c. Superior, 15-19 June 1976, 504 = Myers-Adams 5, 15-16 Mar. 1973, 240, 10.57
 - d. ANS, 10.42 \(\strice{1} \); Hess, 25 Mar. 1929 (Vogel), 375, 10.58
 - e. Walcher de Moltheim Collection, 2635, 10.90
 - Rev. Aramaic inscription, TDNM = Datames to r. Head of Ares r. in Attic helmet with three-part crest and movable double visor with three olive leaves above and three small diagonal lines at the lower l. corner (hereafter Var. 2).
 - f. ANS, 10.95 \(^(Plate 1, 2))
 - Rev. Aramaic inscription, PRNBZWKLK = Pharnabazos Cilicia to l. Head of Ares l. in Attic helmet with three-part crest and movable double visor, three small diagonal lines at lower r. corner of helmet; to r., **.
- 73. a. Paris 173 = Trailé, pl. 108, 5, 10.24 f; ANS, 10.77 \downarrow IGCH 1244 (Plate 1, 3)
 - b. Athens, 9.685 ↑



- c. SNGCop 269, 10.56 ↑ IGCH 1244
- d. Schenk 8, 24-25 June 1966, 1041

Rev. Type as above; to r., ♣.

- e. Stockholm 24167 = Münz. u. Med. 7, 1948, 490, 10.72 /; BM = Weber 7616 = Sotheby, 28 May 1900, 396, 10.90 \; SNGvAulock 5919, 10.73; Peus 261, 20 June 1960, 828, 10.68; Feuardent, 8 July 1919 (Ready), 503
- f. Sotheby, 8 May 1916 (Headlam), 344, 10.675
- Rev. DATAMES Aramaic inscription, TDNM = Datames to r. Head of Ares l. in Attic helmet with three-part crest and movable double visor, three small diagonal lines at lower r. corner (hereafter Var. 3).
- g. Berlin (v. Gansauge), 9.93 \(\gamma\) (Plate 1, 4)

DATAMES

4. Lady/Ares

Obv. As above.

Rev. Var. 2.

1. a. Weber 7624 = Cahn 66, 9 May 1930, 350 = Naville 14, 2 July 1929 (Churchill), 466, 10.95; Berlin (Löbbecke), 10.76 ↑ (same rev. die as 3.72f; Plate 2, 16)

Rev. Var. 1.

- b. Naville 12, 18-23 Oct. 1926 (Bissen), 1921, 10.93; Superior, 15-18 June 1972, 241
- c. SNGvAulock 5834, 10.72
- Rev. Aramaic inscription, TDNM = Datames to r. Head of Ares r. in Attic helmet with three-part crest and movable double visor, three small diagonal lines at lower l. corner (hereafter Var. 4).
- d. Vienna 13.183, 10.18 †



Rev. Var. 1.

a. Ciani-Vinchon, 6-8 Feb. 1956 (Hindamian), 589 = Sotheby,
 3 July 1911 (Butler), 282

Rev. Var. 2.

- b. Paris 181 = Babelon, Pers. Ach., pl. 4, $11 = Trait\acute{e}$, pl. 108, 19, 10.61 \checkmark
- c. ANS, 10.68 \

Rev. Var. 3.

- d. SNGCop 275, 11.07 \uparrow IGCH 1244 (same rev. as 3.72g; Plate 2, 17)
- e. Naville 1, 4 Apr. 1921 (Pozzi), 2848, 10.45; ANS, 10.46 →; Paris (Armand-Valton), 463, 10.00 ↑

Rev. Var. 4.

- f. Traité, pl. 108, 18 = Münz. u. Med. 54, 26 Oct. 1978, 345, 10.86
- Rev. Aramaic inscription, TDNM = Datames to l. Head of Ares l. in Attic helmet with three-part crest and pointed visor without hook, three small diagonal lines in lower r. corner (hereafter Var. 5).
- h. SNGCop 274, 10.86 † IGCH 1244

Rev. Var. 1.

- 3. a. Cahn 65, 15 Oct. 1929, 229 = Cahn 60, 2 July 1928, 963, 10.1
 - b Schlessinger 13, 4 Feb. 1935 (Hermitage), 1394, 10.3
 - c. Joel Malter FPL, Fall 1969, 122, 10.6
 - d. Berlin (Prokesch-Osten), 10.65 †; Frey 10, Dec. 1962, 16, 10.82
- 4. a. SNGvAulock 5935, 10.75

Rev. Var. 2.

- b. *SNGvAulock* 5940, 10.80; J. Schulman, 28–30 Sept. 1973, 1211, cmk: 7 on rev.
- 5. a. Cahn 84, 29 Nov. 1933, 394 = A. Hess, 18 Mar. 1918, 725, 10.75



Rev. Var. 1.

- 6. a. Berlin (Löbbecke), 10.32 \
- 7. a. Giessener 24, 14-15 Mar. 1983, 90, 10.58
- 8. a. Superior, 7-8 Dec. 1972, 209, 10.42
- 9. a. Glendining, 1 Dec. 1927, 655, 10.30

Rev. Var. 2.

- 10. a. Paris R2966, 10.69 ← *IGCH* 1244; Glendining, 14 June 1918, 108 = Bourgey, 6 June 1909, 333 = Sotheby, 7 Dec. 1896 (Bunbury), 389, 10.76; Parke-Bernet, 16–17 Oct. 1968 (E. T. Newell), 194
 - b. Glendining, 7-8 Mar. 1957, 328 = ACNACDavis (1969), 244, 10.72 \uparrow
 - c. K. Kress 93, 17 Nov. 1952, 223a

Rev. Var. 3.

d. Berlin 28674/56, $10.36 \rightarrow$

Rev. Var. 4.

- e. Berlin (Imhoof-Blumer), 10.83 ↓; Paris 182a = Waddington 4568, 10.78 ↓; London, 10.63 \(\); K. Kress 153, 3-5 Nov. 1971, 341, 10.05, cmk: 7 on rev.; Münzhandl. Basel 10, 15 Mar. 1938, 361 = Hess 207, 1 Dec. 1931, 617, 10.92; H. Schulman, 20-23 June 1961, 1165; Sotheby, 1 May 1929, 64; Auctiones Basel 8, 27-28 June 1978, 325, 10.33; Hesperia Art 18, 48; Sotheby, 20 July 1914, 122, 10.76
- f. Brussels, 1052 ↑; ANS, 10.11 ↓; 's Gravenhage 6496, 10.78 ↓;
 Rasmussen, 10–12 Mar. 1970, 835, 10.57
- g. Berlin (Prokesch-Osten), 10.25 ✓

Rev. Var. 5.

- h. Hess 207, 1 Dec. 1931, 618, 10.56; Peus, July 1970, 26; Coin Galleries, 5 Nov. 1966, 149, 10.68
- Rev. Aramaic inscription, TDNM = Datames to l. Head of Ares l. in Attic helmet with three-part crest and movable double visor with three olive leaves above, three diagonal lines in lower r. corner (hereafter Var. 6).
- i. Brussels (de Hirsch 1602), $10.96 \rightarrow$



- Rev. Aramaic inscription, TDNM = Datames to r. Head of Ares r. in Attic helmet with three-part crest and movable double visor, no diagonal lines (hereafter Var. 7).
- j. Superior, 4-8 June 1979, 1409, 10.79
- Rev. As above; three diagonal lines in lower l. corner and palmette on helmet above visor (hereafter Var. 8).
- k. Feuardent, 17 Dec. 1919 (Collignon), 365

Rev. Var. 2.

- 11. a. Seaby 2, 15 July 1929, 461 (same rev. die as 4.10c)
 - Rev. Var. 8.
 - b. Bourgey, 24–25 Feb. 1983, 98

Rev. Var. 2.

Rev. Var. 7.

- b. Graf Klenau 66, 24 June 1972, 216, cmk: 7 on rev.; Kölner Münz. 21, 4–5 Apr. 1977, 94, cmk: 7 on rev., 10.53; K. Kress 180, 2–3 July 1981, 594, cmk: 7 on rev.; Stockholm 100316 = B. Ahlstrom FPL 9, 1975, 514 = Sotheby, 30 Nov. 1973, 61, 10.61 ↑, cmk: 7 on rev.; Kleanau 74, 5 May 1973, 178, cmk: 7 on rev.; Joel Malter FPL 25, 1970, 102, cmk: 7 on rev.; G. Hirsch 93, 11–14 June 1975, 3139, 10.29, cmk: 7 on rev.; Münz u. Med., 11–12 Feb. 1971, 171, cmk: 7 on rev.; G. Hirsch 55, 11–14 Dec. 1967, 2215, 9.97, cmk: 7 on rev.; Coin Galleries, 18 July 1973, 262, cmk: 7 on rev.; Artemis Antiquities 4, 1970, 82, cmk: 7 on rev.; Münchner Münzhandl., 29–30 Apr. 1976, 401, cmk: 7 on rev.
- c. ANS, 10.73 \ IGCH 1244, cmk: 7 on rev.
- d. Dresden 1580, 10.95 \(\), cmk: 7 on rev.
- e. SNGBerry 1294, 10.71 1, cmk: 7 on rev., overstruck on coin of Side (BMCLycaonia, pl. 26, 7)



- f. K. Kress 158, 8-9 Nov. 1973, 477, cmk: 7 on rev. (rev. legend misspelled 7 4 4 7).
- g. R. J. Myers, 5 Dec. 1974, 168 = Coin Galleries, 14 Feb., 1973, 124, 10.69, cmk: 7 on rev.
- h. Graf Kleanau 83, 27 Oct. 1973, 2288 = K. Kress 153, 3-5 Nov. 1971, 340, 10.82, cmk: 7 on rev.
- i Cahn 80, 27 Feb. 1933, 364, 10.47, cmk: 7 on rev.
- London, 10.38 /, cmk: 7 on rev.; Coin Galleries, 21 Nov. 1974,
 514, cmk: 7 on rev.
- k. Paris R2970, 10.94 / IGCH 1244, cmk: 7 on rev.; Berlin Löbbecke), 10.52 /, cmk: 7 on rev.

Rev. Var. 8.

1. Münchener Münzhandl. 29-30 Mar. 1976, 400, cmk: 7 on rev.

Rev. Var. 7.

- 13. a. ANS, 10.91 ↑; Krichelfdorf 16, 1-2 July 1966, 126; Münz. u. Med., Sept.-Oct. 1976, 266, 10.38, doublestruck, cmk: 7 on rev. (same rev. die as 4.12k)
 - b. Coin Galleries, 17 May 1983, 125, 10.60; Harmer, Rooke, 19 Jan. 1978, 172, 10.80
 - c. SNGCop 280, 10.82 / IGCH 1244
 - d. H. M. F. Schulman, 18–20 Nov. 1965, 532
 - e. Coin Galleries, 23 Mar. 1971, 53, 9.92
 - f. Stack's, 16–18 Mar. 1983, 47, 10.67
 - g. H. Christensen, 9 July 1965 (Parsons), 78, 10.74
 - h. Numismatica-Wien, 10–12 Oct. 1974, 29, 10.63
 - i. G. Hirsch 93, 11–14 June 1975, 3140
 - j. Sternberg, 24 Nov. 1977, 153, 10.74

Rev. As above; lower l. corner of helmet A (hereafter Var. 9).

- k. SNGvAulock 5937, 10.64; London, 10.82 \(\frac{1}{3}\)
- ANS, 10.76 ↑ IGCH 1244 (Plate 2, 20); Superior, 3-4 Oct.
 1978, 63, 10.78; Galleries des Monnaies (Geneva), 9 June
 1978, 1445; Superior, 17-23 June 1974, 284



- Rev. As above, corner of helmet unmarked; to l., small grape cluster (hereafter Var. 10).
- n. Winterthur 4665, 10.75 ↑; ANS, 10.70 ↑ IGCH 1244 (Plate 2, 18); Paris R2971, 10.63 ↓ IGCH 1244; SNGCop 286, 10.55 → IGCH 1244; SNGCop 285, 10.48 ✓ IGCH 1244; Sotheby, 1 Dec. 1924 (Wilkinson-Hodge), 191, 9.85
- o. SNGCop 283, 10.61 \ IGCH 1244; SNGCop 284, 10.79 ← IGCH 1244
- p. SNGvAulock 5941, 10.75; SNGCop 282, 10.70 ← IGCH 1244; Bank Leu 15, 4 May 1976, 333, 10.76; Hesperia Art 9, 53; G. Kastner, 27–28 Nov. 1973, 173, 9.85; Frankfurter Münzhandl. 109, 2–4 Dec. 1963, 2141, 10.71, doublestruck
- q. ANS, 10.06 †; A. G. Malloy, 28 Mar. 1973, 218
- r. BM, 10.71 †; Superior, 15–18 June 1972, 242 = P. & P. Santamaria, 25 Oct. 1951, A567, 10.15
- s. E. Gans, 19 Apr. 1960 (Bauer), 384
- t. Ball 6, 9 Feb. 1932, 368 = J. Hamburger, 17 June 1908, 608, 10.20
- u. $SNGCop\ 281,\ 10.79 \leftarrow IGCH\ 1244$
- v. $SNGCop\ 287,\ 10.75 \leftarrow IGCH\ 1244$
- w. Bank Leu 22, 8-9 May 1979, 151, cmk: 7 on rev., 10.62 *IGCH* 1244
- Rev. As above, at lower l. corner of helmet, small T (hereafter Var. 11).
- x. Hesperia Art 4, 14 (Plate 2, 21)
- Rev. Var. 2
- 14. a. Berlin (Imhoof-Blumer), 10.435 †
 - Rev. Var. 3.
 - b. Sotheby, 28 May 1900, 397, 10.66
 - Rev. Var. 2.
- 15. a. SNGCop 292, 10.88 ₹ IGCH 1244; SNGvAulock 5939, 10.70
- 16. a. Berlin (Fox), $8.64 \rightarrow$
- 17. a. Giessener 24, 14-15 Mar. 1983, 89, 10.72



- 18. a. NCirc 1974, 6112
- 19. a. Bourgey, 14 Dec. 1934, 112
- 20. a. Coins & Antiquities 4, 1972, G221, cmk: 7 on rev.
- 21. a. Bourgey, 4 Mar. 1960, 87, 9.51
- 22. a. Peus 261, 20 June 1960, 830, 10.66, cmk: 7 on rev.
- 23. a. Jameson 1, 1617 = J. Vinchon, 25 Apr. 1966, 221, 10.68
- 24. a. SNGNewnhamDavis 336, 10.70
- 25. a. Coin Galleries, 20 Apr. 1961, 140
- 26. a. Ratto, 8 Feb. 1928, 729, 10.50
- 27. a. Kricheldorf 7, 12–13 Nov. 1959, 95, 10.35
- 28. a. Knobloch FPL 21, Spring 1961, 168, cmk: 7 on rev.

Rev. Var. 3.

- 29. a. Berlin (Imhoof-Blumer), 10.565 \(\frac{1}{2}\)
 - b. Helbing FPL 17, ?1934, 315 = Helbing 70, 9 Dec. 1932, 681, 10.9

Rev. Var. 4.

c. Hess, 25 Mar. 1929 (Vogel), 374, 10.90

Rev. Var. 7.

d. $SNGCop\ 278,\ 10.68 \rightarrow IGCH\ 1244$

Rev. Var. 3.

- 30. a. *BMCLycaonia*, pl. 29, 10, 10.83; Glendining, 25 Nov. 1953, 101 (same rev. die as 4.29a)
- 31. a. De Luynes 2838, 10.2 7; BM, 10.50 †; Glendining, 21-23 Feb. 1961 (Lock.), 2515 = Naville 5, 18 June 1923 (BM dupl.), 2735, 10.85; Schlessinger 13, 4 Feb. 1935 (Hermitage), 1396, 10.00
 - b. Hirsch 11, 4 May 1904, 342
- 32. a. Hunter 2, pl. 60, 9, 10.58
 - b. Bourgey, 23 May 1910, 118
- 33. a. ANS, 9.77 \not ; Numismatica-Wien 7, 13–15 Feb. 1975, 134 = Cahn 60, 2 July 1928, 964, 9.74 \uparrow
- 34. a. ANS, $10.79 \rightarrow IGCH$ 1244
- 35. a. A. Hess 251, 7-8 May 1981, 101, 10.63



- 36. a. SNGBerry 1297, 10.78 †
- 37. a. H. M. F. Schulman, 20–21 May 1966, 727, overstruck? cmk: 7 on rev.
- 38. a. Sotheby, 22 Apr. 1909 (White-King), 255 = Hirsch 13, 15 May 1905 (Rhousopoulos), 4367, 10.73
- 39. a. Myers-Adams, 6 Dec. 1973, 218, 10.65
- 40. a. Coin Galleries FPL 5, 2, 1964, B108
- 41. a. Platt, 3 Apr. 1933, 178
- 42. a. Frankfurter Münzhandl. 118, 18-20 Jan. 1971, 1635, 10.57
- 43. a. K. Schenk, 29 Apr. 1969, 33
- 44. a. Federal Coin Exchange, 17–21 Aug. 1954, 2370, cmk: 6 on rev.
- 46. a. Jameson 1, 1616, 10.82

Rev. Var. 4.

- 47. a. SNGvAulock 5936, 10.77; SNGDelepierre 2877, 10.69 ↓; ANS, 10.68 ↑; G. Kastner 10, 18 May 1976, 90, 10.23
 - b. Helbing, 9 Apr. 1913, 670, 10.20; J. Schulman, 4–6 Feb., 1957, 1230 = Ciani-Vinchon, 6–8 Feb. 1956 (Hindamian) 587, 10.75
 - c. Athens, 9.505 1
- 48. a. Sotheby, 19 Jan. 1914 (Cumberland Clark), 248, 10.95

Rev. Var. 5.

b. $SNGCop\ 276,\ 10.70 \rightarrow IGCH\ 1244$

Rev. Var. 4.

- 49. a. 's Gravenhage (v. Rede) 2650, 9.81 \(\)
- 50. a. 's Gravenhage (K.A.W.) 137, 10.47 ←
- 51. a. Bourgey, 5-6 Dec. 1977, 110, 10.22
- 52. a. K. Kress 158, 8-9 Nov. 1973, 475
- 53. a. Morgenthau 338, 10 Oct. 1934 (Burrage), 147
- 54. a. Glendining, 24 Sept. 1975, 40.
- 55. a. Glendining, 31 Jan. 1951, 249, 10.63
- 56. a. H. M. F. Schulman, 6-8 Feb. 1969, 423



Rev. Var. 5.

- 57. a. Joel Malter FPL 24, 1970, 98, 10.1; Glendining, 4 Oct. 1957, 178, 10.74
 - b. K. Kress 152, 5 July 1971, 257, 10.5

Rev. Var. 8.

c. Hamburger, 12 June 1930, 391, 10.75

Rev. Var. 5.

- 58. a. ANS, 10.79 %; 's Gravenhage 6497, $10.90 \leftarrow$
- 59. a. ANS, $10.61 \rightarrow IGCH \ 1244$
- 60. a. Paris 184, 10.36 †
- 61. a. Sotheby's, 20 Feb. 1980, 283 = J. Schulman, 19 Nov. 1969, 183, 10.67
- 62. a. Münz. u. Med., 2–3 Dec. 1975, 176 = H. M. F. Schulman, 19 Nov. 1955, 1875, 10.63
- 63. a. J. Schulman 265, 28–29 Sept. 1976, 205, 10.65
- 64. a. R. Ratto, 26 Apr. 1909, 4619, 10.88
 - Rev. Aramaic inscription, TDNM = Datames to r. Head of Ares r. in Attic helmet with three-part crest and pointed visor, hook above visor and three diagonal lines in lower l. corner (hereafter Var. 12).
- 65. a. K. Kress 154, 21 Mar. 1972, 256

Rev. Var. 7.

b. ANS, 10.41 L

Rev. Var. 8.

- c. 's Gravenhage 1949/65, 10.76 \; K. Kress 154, 21 Mar. 1972, 255, 10.65, cmk: 7 on rev.
- d. ANS, 10.84 \((Plate 2, 19)
- e. Paris 1972/1340-44, 10.50 /
- f. Winterthur 4664 = Riechmann 30, 11 Dec. 1924 (Berlin dupl.), 747, 9.79 \(\bar{\chi}\)
- g. Schlessinger 13, 4 Feb. 1935 (Hermitage), 1395, 10.5
- h. Münz. u. Med. FPL 228, Jan. 1963, 15, 10.73



Rev. Var. 7.

- 66. a. Paris (Armand-Valton) 462, 10.17 ↓; Hamburger 96, 25 Oct. 1932, 156, 9.9; Sotheby, 21 Feb. 1929, 87, 10.50; Hess-Leu, 12–13Apr. 1962, 335, 10.72
 - b. Platt, 27 Mar. 1922 (Luneau), 703; Ciani-Vinchon, 6-8 Feb. 1956 (Hindamian), 588; Stack's, 6-7 Sept. 1973, 99, 10.015 legend misspelled 7 44 4 r).
 - Kastner 12, 30 Nov. 1976, 134, 10.60; Coin Galleries, 20 Apr. 1961, 142; Federal Coin Exch., 17-21 Aug. 1954, 2369
 - d. SNGBerry 1293, 10.84 \,, cmk: 7 on rev.
- 67. a. SNGCop 288, 10.76 ₹ IGCH 1244
 - b. Bourgey, 29-30 June 1976, 78, 9.99

Rev. Var. 8.

- c. Ball 6, 9 Feb. 1932, 367, 10.00
- d. Helbing, 20 Mar. 1928, 422, 10.1

Rev. Var. 7.

- 68. a. Crowther, Coin & Ant. FPL 2, 1972, G144
 - b. Münz. u. Med., Sept-Oct. 1976, 265, 10.62
 - c. $SNGCop\ 279,\ 10.87 \leftarrow IGCH\ 1244$
 - d. G. Hirsch 32, 22-24 Oct. 1962, 2433
 - e. Numismatica, 20–23 Nov. 1978, 121, 10.85
- 69. a. ANS, $10.69 \neq IGCH$ 1244, cmk: 7 on rev., doublestruck; ANS, $9.41 \rightarrow$, doublestruck
- 70. a. Vienna 32.03, 10.00 \\$
 - b. G. Hirsch 89, 8–9 Oct. 1974, 694, 8.95
- 71. a. Christie's, 4 Oct. 1977, 62, 10.8
 - b. G. Hirsch, 12, 25–27 Apr. 1957, 170, 9.5
- 72. a. Bank Leu 2, 25 Apr. 1972, 267 = E. Button, 2-3 Oct. 1958, 63, 10.72; Auctiones Basel, 3-4 Dec. 1948, 491, 10.78
- 73. a. Egger 46, 1914, 2259, 10.45 (same rev. die as 4.72a)
- 74. a. Federal Coin Exch., 13-14 Nov. 1954, 1692 = Cahn, 26 Nov. 1930, 1500; Naville 7, 23-24 June 1924 (Bement), 162 = Bourgey, 29 May 1911 (Rous), 213, 9.62
 - b. Cahn 60, 2 July 1928, 962, 10.1



- 75. a. $SNGCop\ 277,\ 10.54 \rightarrow IGCH\ 1244$
- 76. a. G. Hirsch 135, 19-21 Jan. 1983, 459, 10.79
- 77. a. G. Hirsch 135, 19-21 Jan. 1983, 460, 10.31
- 78. a. Bourgey, 14-16 June 1978, 107, 9.39
- 79. a. A. Hess, 18 Feb. 1936, 1564, 10.2
- 80. a. Kastner 4, 27–28 Nov. 1973, 172, 10.53
- 81. a. Egger 41, 18 Nov. 1912 (Fenerley Bey), 623, 10.27
- 82. a. Ward coll. 740, 10.28
- 83. a. H. M. F. Schulman, 6-8 Oct. 1970 (H. D. Gibbs), 192
- 84. a. K. Kress 152, 5 July 1971, 263, 9.0, cmk: 7 on rev.
- 85. a. Stack's, 15-16 June 1972, 377
- 86. a. Glendining 3, 1 Mar. 1978, 15
- 87. a. Glendining, 18-20 Apr. 1955, 529 = Helbing, 24 Oct. 1927, 3109, 10.00
- 88. a. Glendining, 21-23 Feb. 1961 (Lockett), 2514 = R. Ratto, 13 May 1912, 1059, 10.2
- 89. a. Dorotheum 253, 2 Oct. 1962 (Hollschek), 619, 10.2
- 90. a. Hesperia Art, 23 Apr. 1953, 139
- 91. a. Knobloch FPL 21, Spring 1961, 167
- 92. a. Superior, 15-19 June 1976, 503, 10.65

Rev. Var. 8.

- 93. a. ANS, 10.98 ↓; Paris (Vogüé) 22, 10.83 ↓; A. Hess 253, 8-9 Mar. 1983, 251 = Naville 7, 23-24 June 1924 (Bement) 1626 = Rollin & Feuardent, 9 May 1910 (Duruflé), 594, 10.67; Sotheby, 22 Apr. 1970, 221 = Ratto, 8 Feb. 1928, 728, 9.60; J. Vinchon, 2-3 Dec. 1975, 139, 10.38
 - b. Leu-Münz. u. Med., 3-4 Dec. 1965 (Niggeler), 443, 11.02
 - c. Helbing, 8 Nov. 1928, 4041, 10.45
 - Rev. As Var. 7; small AM on helmet above visor (hereafter Var. 13).
 - d. Münz. u. Med., 11-12 Feb. 1971, 120

Rev. Var. 8.

- 94. a. ANS, 10.07 \(\gamma\) (Plate 2, 24); SNGCop 289, 10.86 \(\chi\) IGCH 1244; M\(\text{unz.}\) u. Med. 360, Sept. 1974, 7, 10.49
 - b. Paris, 1972/1340-45, 10.70 \



- 95. a. ANS, 10.60 † cmk: 7 on rev. *IGCH* 1244; *SNGBerry* 1296, 10.69 *\(\)
- 96. a. SNGvAulock 5938, 10.52 (same rev. die as 4.95a)
- 97. a. Peus 280, 30 Oct.-2 Nov. 1972, 203; Canessa 5, 12 June 1928 (Polese), 914
 - b. Naville 5, 18 June 1923 (BM dupl.), 2734, 9.66
 - d. K. Kress 170, 8-10 Nov. 1977, 563
- 98. a. Berlin (Fox), 10.295 ✓
 - b. JSD Coins 45, 1977, 26
 - c. McClean 3, pl. 328, 8, 10.85
- 99. a. $SNGCop\ 290,\ 10.69 \leftarrow IGCH\ 1244$
- 100. a. SNGCop 291, 10.74 ↑ IGCH 1244
- 101. a. A. Hess 45, 12–13 May 1970, 326, 10.4

Rev. Var. 13.

- 102. a. Kricheldorf 14, 7-8 July 1964, 130, 10.95; Weber 7625, 10.08
 - b. ANS, 10.00 \(\psi\); Ariadne Galleries, 9 Dec. 1981, 263
 - c. $SNGCop\ 293,\ 10.76 \rightarrow$
- 103. a. Glendining, 11 Dec. 1974, 83; Münchner Münzhandl. 166, 1–2 July 1976, 503, cmk: 7 on rev.
- 104. a. BMCLycaonia, pl. 29, 9, 10.20 \(\sqrt{}
 - Rev. As Var. 13; small MA on helmet above visor (hereafter Var. 14).
 - b. ANS, 10.79 ←
 - Rev. Aramaic legend, TDNM = Datames to r. Head of Ares r. in Attic helmet with five-part crest and movable double visor, three small diagonal lines in lower l. corner (hereafter Var. 15).
- 105. a. SNGvAulock 5942, 10.95. Cmk: 7 on rev.; Auctiones Basel 8, 23-24 June 1978, 329, 10.57

COUNTERFEIT?

106. a. ANS, $8.81 \rightarrow$



BARBARIC IMITATION

107. a. SNGCop 294, 11.24 /; ANS, 12.90 /; Bourgey, 3 Dec. 1928, 110

5. BAALTARS/ANA-DATAMES

- Obv. Aramaic inscription, BALTRZ = Baaltars to l. Baaltars seated r. on diphros, head facing; in l., grape cluster and ear of wheat, under r. arm (or in front on obv. 1), long scepter terminating in eagle with wings spread; above l. arm, incense-burner. Crenellated border.
- Rev. Rectangle depicting temple with semi-circular antefixa above; within on l., bearded, nude god pointing with upraised r. arm toward semi-draped standing male figure in Greek attire making gesture of submission with r. arm. Between, incense-burner. Aramaic inscription, TDNM = Datames, along r. leg of semi-draped figure at r. (hereafter Var. 1).
- a. Vienna, 10.22 ↓; Munich (Depositum München), 10.422 →;
 A. Hess 239, 12-13 May 1970, 327; E. Button, 2-3 Oct. 1958, 62; Egger 46, 11 May 1914, 2262, 10.18; Rollin & Feuardent, 9 May 1910 (Duruflé), 596
 - b. De Luynes 2842, $10.64 \leftarrow$; ANS, $9.98 \downarrow$ (Plate 4, 40); Schenk 8, 24–25 June 1966, 1042
 - c. A. Hess, 18 Feb. 1936, 1565 = Helbing 70, 9 Dec. 1933, 682; Helbing FPL 17, 316 = Cahn 71, Oct. 1931, 498 = Cahn 66, 9 May 1930, 351 = Cahn 60, 2 July 1928, 967, 9.9; Hess 202, 28 Oct. 1930, 2595, 10.16; Parke-Bernet, 16-17 Oct. 1968 (E. T. Newell), 197
 - d. McClean 3, pl. 328, 9, 9.9 \(\)
 - e. Naville 1, 4 Apr. 1921 (Pozzi), 2851, 9.78; Cahn, 26 Nov. 1930, 1502; E. Gans, 19 Apr. 1960 (Bauer), 385
 - f. Naville 7, 23-24 June 1924 (Bement), 1631, 10.19
- 2. a. De Luynes 2840, $10.42 \rightarrow$; Paris 196 = Trailé, pl. 109, 10, $10.27 \not$; Hess 207, 1 Dec. 1931, 619, 9.83
 - b. Paris 193b, 9.70 ↓
- 3. a. Glendining, 18–20 Apr. 1955, 530 = Münzhandl. Basel 4, 1 Oct. 1935, 868, 9.80 (same rev. die as 5.2a).



- - b. Bank Leu 18, 5 May 1977, 241, 10.49 †
- 5. a. Sotheby, 27 May 1974, 319 = Knobloch FPL 34, Oct. 1968, 1266; Platt, 27 Mar. 1922 (Luneau), 722
- 6. a. Ratto, 4 Apr. 1927 (Lugane), 2332, 10.47
- 7. a. T. Hirsch 14, 27 Nov. 1905, 564, 10.4
- 8. a. McSorley FPL, date not preserved (probably 1970), 135
- 9. a. Naville 7, 23-24 June 1924 (Bement), 1630, 10.31
- 10. a. Cahn 60, July 1928, 968, 9.93
- 11. a. Hamburger, 28 May 1929, 399, 10.45
- 12. a. Rasmussen, 10-12 Mar. 1970, 836, 10.29
- 13. a. Yale University (formerly ANS)
- 14. a. R. Ratto, 26 Apr. 1909, 4622, 9.88
- 15. a. J. Vinchon, 20-22 May 1959, 573, 9.55
- 16. a. H. M. F. Schulman, 20-21 May 1966, 728; Glendining, 9 June 1982, 226
- 17. a. New Netherlands-Sotheby, 14-15 Nov. 1973, 116
- 18. a. Leu-Münz. u. Med., 3-4 Dec. 1965 (Niggeler), 445, 10.71
- 19. a. Glendining, 7-8 Mar. 1957, 331, 10.02
- 20. a. Vecchi & Sons FPL 9, Apr. 1973, 41
- 21. a. BMCLycaonia, pl. 29, 14, 11.17 \rightarrow
- 22. a. BMCLycaonia, pl. 29, 15, 10.17 †
- 23. a. SNGvAulock 5944, 10.75 †, cmk: 7 on rev.
- 24. a. SNGCop 302, 10.73 † IGCH 1244
- 25. a. SNGCop 300, 10.46 †
- 26. a. SNGvAulock 5943, 10.50
- 27. a. ACNACDavis 245, 10.65 †
 - Rev. Aramaic inscription, TDNM = Datames squeezed between leg of figure and r. border. Type as above (hereafter Var. 2).
- 28. a. ANS, 10.71 \(\cdot \) IGCH 1244 (Plate 4, 41)
- 29. a. ANS, 9.81 #
- 30. a. SNGvAulock 5945, 10.84

Rev. Var. 1.

- 31. a. Berlin (Löbbecke), 10.73 ←, cmk: 7 on rev.
 - b. Stockholm (Smith), 235, 10.18

 ✓



c. De Luynes 2841, 10.30 ↑; Hess-Leu, 6-7 Dec. 1966, 499 = Hesperia Art 9, 5, 10.60 ↑

Rev. As Var. 1 except Ana behind r. leg of god (hereafter Var. 3).

- 32. a. K. Kress 159, 1-2 Apr. 1974, 475, 10.9 (same rev. die as 5.31d).

Obv. As above; under diphros, eagle.

Rev. Var. 1.

- 33. a. 's Gravenhage 1949/66, 10.75 †
- 34. a. BM 9.90 ↑
- 35. a. SNGCop 299, 10.57 †, cmk: 7 on rev.

Rev. Var. 3.

b. SNGBerry 1299, 10.69 †, cmk: 7 on rev.

Rev. Var. 1.

- 36. a. Münz. u. Med. FPL 372, 1975, 20, 10.64; Naville 15, 2 July 1930, 1045, 9.65
- 37. a. A. Hess, 7 Mar. 1935, 409 = T. Hirsch 25, 29 Nov. 1909 (Philipsen), 2764, 10.35 (same rev. die as 5.36a).
 - b. ANS, 9.60 \(\gamma\) (Plate 4, 42)
 - c. K. Kress 153, 3-5 Nov. 1971, 347, 9.9
 - d. Sternberg, 25–26 Nov. 1976, 131, 10.55

Rev. Var. 3.

- e. Paris 198 = Babelon, *Pers. Ach.*, pl. 4, 20, $10.39 \uparrow$; *SNGvAulock* 5950, 10.91
- Obv. As above, lacking eagle; to r., star or sun.
- 38. a. Hirsch 13, 15 May 1905 (Rhousopoulos), 4368, 10. 33 (same rev. die as 5.37e

Rev. Var. 1.

- 39. a. SNGvAulock 5946, 10.77
- 40. a. SNGBerry 1298, $10.74 \downarrow$
 - b. SNGvAulock 5947, 10.70



Rev. Var. 3.

41. a. Athens, 9.89 / (Plate 4, 43)

Obv. As above; star/sun lacking; below diphros, animal.

Rev. Var. 1.

42. a. 's Gravenhage 6499, 9.41 ↑

Rev. Var. 3.

- 43. a. Hess-Leu, 7 Apr. 1960, 233 = Jameson 1, 1615; Egger 45, 12 Nov. 1913, 612
 - b. Kölner Münz. 21, 4–5 Apr. 1977, 93 (Plate 4, 44)
- 44. a. Sotheby, 18 Apr. 1975, 15 = G. Lastner, 27-28 Nov. 1973, 175 = Kress 153, 3-4 Nov. 1971, 344, 10.56, cmk: 7 on rev.
 - Obv. As above; object under diphros lacking; to l. of diphros, small dolphin.

Rev. Var. 1.

- 45. a. Kress 153, 3-5 Nov. 1971, 346, 9.8; Hirsch, 5-6 Dec. 1975, 77, 9.34
- 46. a. Peus 250, 15 Mar. 1954, 523 = Rosenberg 72, 11 July 1932, 693, 10.32
 - b. ANS, $10.75 \leftarrow (Plate 4, 45)$
 - c. J. Vinchon, 20-22 May 1959, 572 = Feuardent, 17 Dec. 1919 (Collignon), 366, 10.10
 - d. Naville 12, 18–23 Oct. 1923 (Bissen), 1922 = Hirsch 29, 9 Nov. 1910 (Lambros), 810, 9.42

Rev. Var. 3.

e. Berlin, 10.441

Obv. As 2-32 above.

Rev. Var. 1.

47. a. ANS, 10.227 (Plate 4, 37)

Rev. Var. 3.

- b. Munich (Depositum München), 9.762 †
- c. Winterthur 4667, 10.81 7
- d. Kölner Münzhandl. 25, 9-10 Apr. 1979, 29, 10.60



Obv. As above; under diphros, dog's head?

Rev. Var. 1.

48. a. Bourgey, 14-16 June 1978, 108, 9.97

b. Dresden 1336, 9.76 † (Plate 4, 46)

Obv. As 2-32 above, at lower l. before legend, bullet.

Rev. Var. 3.

- 49. a. Antike Münzen Zurich 13, 29-30 Apr. 1975, 287, 10.65
- 50. a. Paris (de Briailles) 629, $10.60 \leftarrow (Plate 4, 47)$
 - Obv. As 2-32 above; below diphros, small ram's head.
- 51. a. ANS, 9.95 \(\gamma\) (Plate 4, 48)
 - Obv. Baaltars seated l. (mirror image of 2-32 above).
 - Rev. As Var. 3 above; at lower l. Aramaic inscription ANA engraved outside rectangle representing temple.
- 52. a. Paris $193a = Trait\acute{e}$, pl. 109, 14, $10.78 \uparrow$

Rev. Var. 3.

- b. Paris $193 = Trait\acute{e}$, pl. 109, 15, 10.57 †
- c. Kölner Münz., 22-24 Apr. 1971, 53, 9.95

Obv. As 2-32 above.

- 53. a. Ariadne Galleries Galleries des Monn., 9 Dec. 1981, 262
 - b. Münz. u. Med., Sept.-Oct. 1976, 264, 10.69
 - c. J. Schulman, 24 Nov. 1913 (Kreling), 482; 's Gravenhage (v. Rede) 2653, 10.32 ↑ (Plate 4, 50)
- 54. a. Schlesinger 13, 4 Feb. 1935 (Hermitage), 1398, 10.00
 - b. Naville 5, 18 June 1923 (BM dupl.), 2737, 9.87
- 55. a. Bourgey, 27 Nov. 1911 (Chabenat), 159
 - b. Auctiones Basel 8, 27-28 June 1978, 327
- 56. a. BMCLycaonia, pl. 29, 15, 10.17 ↑
 - b. BM, 9.54 ↑
- 57. a. J. Vinchon, 24 Feb. 1971, 165
- 58. a. M. G. Lee, 10-11 May 1954, 441, 9.36
- 59. a. Klenau, 27 Oct. 1973, 2289 = Kress 153, 3-5 Nov. 1971, 345, 10.75, cmk: 7 on rev.



- 60. a. Glendining, 21-23 Feb. 1961 (Lockett), 2517 = Naville 1, 4 Apr. 1921 (Pozzi), 2852, 9.51
- 61. a. Coin Galleries, 20 Apr. 1961, 143
- 62. a. Galleries des Monn., 9 June 1978, 1447 = Bank Leu 15, 4-5 May 1976, 334, 10.69
- 63. a. Joel Malter, 1969, 121 = Cahn 60, July 1928, 966, 9.9
- 64. a. ANS photo file, "lot 1104" (information lost), 10.85
- 65. a. Sternberg, 24 Nov. 1977, 154, 10.45
- 66. a. Peus 280, 30 Oct.-2 Nov. 1972, 204, 9.57
- 67. a. Münz. u. Med. FPL, Aug. 1949, 129
- 68. a. Naville, 16 June 1922 (Evans), 946, 10.17
- 69. a. Helbing, 20 Mar. 1928, 423, 10.00
- 70. a. Kastner, 27-28 Nov. 1973, 174, 10.4
- 71. a. Rosenberg 69, 2 Dec. 1930, 2370, 10.00
- 72. a. Hamburger 96, 25 Oct. 1932, 158, 10.45
- 73. a. Hirsch 26, 24 May 1910, 552, 10.25
- 74. a. Berlin (Imhoof-Blumer), 10.58 †
- 75. a. ANS, 10.27 †
- 76. a. Paris (Armand-Valton) 464, 10.06 †
- 77. a. Coin Galleries, 20 Feb. 1981, 128, 10.79 \(\dagger, cmk: 7 on rev.
- 78. a. Auctiones Basel 7, 7–8 June 1977, 304, 10.44 ↑
- 79. a. SNGCop 301, 10.78 ↑ IGCH 1244
- 80. a. Stockholm (Smith) $236 = \text{Naville } 10, 1925, 735 = \text{Ratto}, 13 \text{ May } 1912, 1060, 10.04 \uparrow$
- 81. a. SNGvAulock 5948, 10.75

6. BAALTARS/SEATED SATRAP

- Obv. As issue 5 above; Baaltars seated r. on diphros, facing r. Rev. Aramaic inscription, TDNM = Datames to l. Satrap in satrapal tiara seated r. on diphros holding arrow with bow
- 1. a. Stockholm 27416 = Peus FPL, 1964, 6.87 \uparrow

below r. hand; to r. Ahura Mazda.

b. SNGvAulock 5951, 10.55



- 3. a. SNGCop 297, 9.63 ↑; Traité, pl. 109, 6, 10.21; Merzbacher, 2 Nov. 1909, 3156, 9.83; Ratto, 4 Apr. 1927 (Lugane), 2330, 9.75; Naville 1, 4 Apr. 1921 (Pozzi), 2850, 9.96; Leu-Münz. u. Med., 3-4 Dec. 1965 (Niggeler), 444 = Hess-Leu, 16 Apr. 1957, 290 = Jameson 1, 1614, 9.93
 - b. Glendining, 7–8 Mar. 1957, 330, 9.94; Naville 7, 23–24 June 1924 (Bement), 1629
 - c. Münz. u. Med., Sept.-Oct. 1976, 263, 10.2
 - d. Schlessinger 13, 4 Feb. 1935 (Hermitage), 1397, 10.00
 - e. Egger 46, 11 May 1914, 2260, 9.96
 - f. Kölner Münz., 9-11 Oct. 1973, 59, 10.19
 - g. ANS, 9.84 †; A. Hess 253, 8-9 Mar. 1983, 250 = Naville 7, 23-24 June 1924 (Bement), 1628 = Feuardent, 17 Dec. 1919 (Collignon), 367, 9.82
 - h. ANS, 9.23 1

Obv. As above; below diphros, seated lion.

- 4. a. Kricheldorf 36, 4 Dec. 1982, 85, 10.35
 - b. Winterthur 4666, 10.14 \(^{1}\) (Plate 5, 52)
 - c. Antike Münzen 13, 29–30 Apr. 1975, 288, 10.37
 - d. Knobloch FPL 34, Oct. 1968, 1265
 - e. Berlin, 10.095 †; Bourgey, 5–6 Dec. 1977, 111, 10.53
 - f. Berlin, 8.22 \(\gamma\); Cahn 65, 15 Oct. 1929, 230 = Cahn 60, 2 July 1928, 965, 9.53
- 5. a. Münz. u. Med. FPL 159, Aug. 1956, 15 = Ciani-Vinchon,
 6-8 Feb. 1956, 590 = Ciani, 17 Feb. 1925 (Allotte de la Fuye),
 619
 - b. Hess 102, 28 Oct. 1930, 2594 = Hess, 25 Mar. 1929 (Vogel), 376, 9.15
- 6. a. SNGBerry 1300, 10.43
 - b. SNGNewnham Davis 335, 9.98
 - Glendining, 21–23 Feb. 1961 (Lockett), 2516 = Naville, 16
 June 1922 (Evans), 944, 9.92
 - d. McClean 3, pl. 328, 10, 10.54 ✓
- 7. a. Paris 190, 9.33 1
- 8. a. Galleries des Monn., 9 June 1978, 1446



- Obv. As above; below diphros, bucranium.
- 9. a. Brussels (de Hirsch 1603), 10.54 \(\psi \) (Plate 5, 53)
 - b. Bourgey, 24–25 Feb. 1983, 99, 10.01 ←
 - MFA (Warren) 1270 = Sotheby, 13 June 1911 (Sandenear),
 247, 10.53; Naville, 16 June 1922 (Evans), 945 = Weber 7629, 10.39
- 10. a. SNGvAulock 5952, 10.48
 - b. Paris (Vogüé) 25, 10.05 ↓
 - McSorley FPL, no date, 134 = Hirsch 25, 1909 (Philipsen),
 2763 = Sotheby, 28 May 1900, 398
 - d. Berlin (Löbbecke), 10.48 ←
- 11. a. BMCLycaonia, pl. 29, 12, 10.70 \rightarrow
 - b. SNGCop 295, 10.65 \ IGCH 1244; SNGCop 296, 10.65 \
- 12. a. SNGDelepierre 2878, 10.54 ₹
- 13. a. Paris $188a = Waddington 4569, 10.38 \uparrow$
- 14. a. SNGCop 298, 7.95 ↑
 - Obv. As above; below diphros, forepart of dog.
- 15. a. Pozzi 2849 = Naville 5, 18 June 1923 (BM dupl.), 2736, 9.72
 - b. Sotheby, 8 Feb. 1978, 43
 - c. 's Gravenhage 6498, 10.52 /
- 16. a. Bourgey, 27 Nov. 1911 (Chabenat), 158
- 17. a. Berlin 9953, 10.15 \(\gamma\) (Plate 5, 54)
 - Obv. As above; below diphros, forepart of small animal with erect ears.
- 18. a. BMCLycaonia, pl. 29, 13, 10.41 † (Plate 5, 55)
 - b. Athens, 9.40 1
- 19. a. Paris 465, $10.22 \rightarrow$
 - b. Kastner, 27–28 Nov. 1973, 176, 10.32
- 20. a. Berlin (Fox), 10.49 †
 - b. Rollin & Feuardent, 9 May 1910 (Duruflé), 595
 - c. 's Gravenhage (v. Rede) 2651, 10.00 1
- 21. a. Kastner 10, 18 May 1976, 91, 10.34 /



- Obv. As above; below diphros, knucklebone.
- - b. Paris 189, 10.09 \(^{\chi}\)
 - Obv. As above; below diphros, lotus blossom.
- 23. a. BMCLycaonia, pl. 29, 11, 10.34; Paris $2839 = Trait\acute{e}$, pl. 109, 4, 10.99 \searrow
- 24. a. ANS, $10.52 \downarrow$ (Plate 5, 57)
 - b. Münz. u. Med., 18–19 June 1970, 276, 10.55
 - Obv. As above; below diphros, unknown flower.
- 25. a. Kricheldorf 9, 12 June 1961, 248, 9.76
 - Obv. As above; below diphros, M.
- 26. a. Bank Leu 15, 4-5 May 1976, 335, 10.43
- 27. a. Frankfurter Münz. 113, 16-18 Jan. 1967, 633, 10.4
 - Obv. As above; below diphros, uncertain object.
- 28. a. E. Gans 30, Fall 1963, 7456
- 29. a. M. G. Lee, 10-11 May 1954, 440, 9.15

COUNTERMARKS

- 1. Eagle l.; to r., a trident
- 2. Bull r.; above, shield?
- 3. Wolf running l.; above, crescent
- 4. Lion walking r.
- 5. Lion standing r.
- 6. Bull walking r.
- 7. Bull walking r.; above, Aramaic inscription BAAL



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(Plates 6-26)

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MARGARET THOMPSON

In memory of Otto Mørkholm

In 1927 or perhaps slightly earlier a large hoard of hellenistic coins was uncovered in Asia Minor. The exact findspot is uncertain. A dealer in the United States, from whom the bulk of the hoard was purchased, wrote that it came from Armenak near Adana in Cilicia. An English source merely stated that their coins were from Turkey and had been obtained from an Istanbul dealer named Alyanak. In the IGCH Armenak is identified as a variation of Ermenak, the modern name of Germanicopolis in Cilicia Tracheia. There are problems. Armenak, if it is the present Ermenak, is not near Adana although it is in Cilicia. More serious is the fact that Germanicopolis is thought to be a foundation of Antiochus IV of Commagene, named in honor of Caligula Germanicus. This is more than 300 years after our hoard would have been buried and there is no record of an earlier settlement in the remote mountainous area where the present-day Ermenak is located. Furthermore, the hoard contains an unusually high proportion of coins from Macedonia and northern Asia Minor and practically nothing from the southern region, which would be surprising in a Cilician deposit. Years ago Henri Seyrig expressed the opinion that Armenak was not a place name but the name of the person from whom the hoard was obtained. That Armenak is a corruption of Alyanak is certainly a possibility. Under the circumstances it would be safer to identify the find as simply coming from Asia Minor but since it has for so long been known as the Armenak Hoard, that name will be retained.

Edward Newell over the course of several years purchased nearly a thousand coins from dealers in this country and abroad. In addition he made a listing of hoard pieces which he saw but did not buy and the descriptions are so detailed that most of the issues can be identified. These coins are included in an appendix.

In the catalogue that follows the entries represent the standard coin types of the individual rulers with variations in legend indicated. Issues of Philip III are combined with those bearing the Alexander inscription. Die axes are given only when the orientation is definitely other than twelve o'clock; slight deviations to the left or right of the upright position have been disregarded. Asterisks denote illustrated specimens.¹

¹ This article owes much to the skill and helpfulness of Hyla Troxell who compiled the Appendix and catalogued the Lysimachi now at the ANS. Her invaluable contribution is most gratefully acknowledged.

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Tarsos

ALEXANDERS

Tetradrachms

Amphipolis

- 1. Rev. to l., horse's head. Demanhur 490. 17.05 \leftarrow
- 2. Rev. to 1., E. Demanhur 536. 17.03 ←
- 3. Rev. BASIAEQS; to 1., helmet. Demanhur 1251. 16.97
- 4. Rev. BASIAEQS; to I., Phrygian cap. Demanhur 1344. 16.97 \leftarrow
- 5. Rev. to 1., club; below, **P**. 17.21
- 6. Rev. to l., fulmen; below, \mathbf{F} . 17.04 \rightarrow
- 7. Rev. to l., aplustre; below, \mathbf{P} . 17.56 \leftarrow
- 8. Rev. as 7. 17.05 \leftarrow
- 9. Dies of 8. 16.70 \(\)
- 10. Rev. to 1., dolphin; below, ₱. 17.16
- *11. Rev. to l., ∧ above bucranium; below, E. 17.04
- *12. Rev. to l., ♦ above torch; below, Δ. 17.21 \(\)
- 13. Rev. as 12. 17.16
- *14. Rev. to l., ? above torch; below, E. 17.18
- *15. Obv. of 14. Rev. to 1., ♦ above torch; below, H. 17.03 1
- 16. Rev. as 15. 17.08
- *17. Rev. to l., \diamondsuit above torch; below, \triangle . 17.32 \leftarrow
- 18. Rev. as 17. $17.26 \rightarrow$
- *19. Rev. to l., Λ above torch; below, forepart of Pegasus l. 16.98 \leftarrow
- 20. Rev. as 19 but Pegasus r. $17.04 \rightarrow$
- *21. Rev. to l., ∧ above torch; below, tripod. 17.18 ←
- *22. Rev. to l., \wedge above torch; below, \triangle . 17.26
- 23. Rev. as 22. $17.09 \rightarrow$
- *24. Rev. to l., ∧ above torch; below, star above I. 17.18 ↓
- 25. Rev. as 24. 17.12 \[\]
- 26. Rev. as 24. $17.20 \leftarrow$
- 27. Rev. to I., \wedge above torch; below, \triangle I. 17.22 \downarrow
- 28. Rev. as 27. 17.20 \ \
- 29. Dies of 28. 17.08 \(\)
- *30. Rev. as 27. $17.07 \rightarrow$
- *31. Obv. of 30. Rev. to 1., Λ above torch; below, H. 17.16 \downarrow



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*32. Obv. of 30 recut. Rev. to 1., \Lambda above torch below, H. 17.10 \leftarrow
 33. Rev. as 32. 17.17 \downarrow
 34. Rev. to l., \Lambda above torch; below, H. 17.13
 35. Rev. of 34. 17.11 ←
 36. Rev. as 34. 17.18
 37. Rev. as 34. 17.17
*38. Rev. as 34. 16.92 \downarrow
*39. Obv. of 38. Rev. to l., \wedge above torch; below, \bowtie . 17.13 \leftarrow
 40. Rev. as 39. 17.18 \( \)
 41. Rev. as 39. 17.12 \leftarrow
 42. Rev. as 39. 17.12.
 43. Rev. as 39. 17.15 \downarrow
 44. Rev. as 39. 17.32 \rightarrow
 45. Rev. as 39. 17.19 \leftarrow
 46. Dies of 45. 17.06 ↓
 47. Rev. as 39. 17.06 \leftarrow
*48. Rev. as 39. 17.08
*49. Obv. of 48. Rev. to I., \Lambda above torch; below, star. 17.21 \downarrow
 50. Rev. as 49. 17.19 \downarrow
 51. Rev. as 49. 17.11 \rightarrow
 52. Rev. as 49. 17.12.
 53. Rev. as 49. 17.17
 54. Rev. as 49. 17.12 \downarrow
 55. Rev. as 49. 17.15 \rightarrow
 56. Rev. as 49. 16.99
 57. Rev. as 49. 16.93 \downarrow
*58. Rev. as 49. 17.04 \rightarrow
*59. Rev. as 49. 17.17 \rightarrow
*60. Obv. of 58. Rev. to l., \wedge above torch; below, cantharus. 17.12 \rightarrow
 61. Rev. as 60. 17.21
 62. Rev. as 60. 17.15 \leftarrow
 63. Rev. as 60. 17.14
*64. Obv. of 59. Rev. to l., \Lambda above torch; below, star above M. 17.50
 65. Rev. as 64. 17.10 \leftarrow
 66. Obv. of 65. Rev. as 64. 17.00 \rightarrow
 67. Rev. as 64 but M above star. 17.15 \( \)
 68. Rev. as 67. 17.081
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- *69. Rev. to l., ∧ above torch; below, €. 17.15
- 70. Rev. as 69. 17.63
- 71. Rev. as 69. 17.13 \(\)
- 72. Obv. of 71. Rev. as 69. $17.24 \rightarrow$
- *73. Rev. to l., A above torch; below, £. 17.16
- 74. Rev. as 73. $17.22 \leftarrow$
- *75. Rev. to l., \land above torch; below, bee. 17.18 \rightarrow
- *76. Rev. to 1., ∧ above torch; below, star above pyramid. 17.14
- *77. Rev. as 76. 17.13
- 78. Rev. as 76. 17.14 \[\]
- *79. Rev. as 76. 17.07 \leftarrow
- *80. Rev. to 1., ∧ above torch; below, crescent above star. 17.11 →
- *81. Rev. A $\Lambda \equiv AN\Delta POY$; to l., Λ above torch; below, ME. 17.18 \leftarrow
- 82. Obv. of 81. Rev. as 81 but AAE Ξ AN \triangle POY. 17.17 \rightarrow
- *83. Rev. to 1., A above torch; below, & . 17.14
- *84. Rev. to 1., \(\Lambda\) above torch; below, star in wreath. 17.13 \(\Lambda\)
- *85. Rev. to l., ∧ above torch; below, caduceus. 17.17 →
- *86. Rev. to 1., ∧ above torch; below, dolphin. 17.41 ←
- *87.2 Rev. to l., Φ; below, **M**. 17.31
- *88. Rev. to l., fulmen above I; below, ME. 17.08
- *89. Rev. to l., fulmen above I; below, dolphin. 17.14 ←
- *90. Rev. to l., fulmen above I; below, caduceus. 17.21 \rightarrow
- *91. Rev. to l., X above star above pyramid; below, wreath. 17.14
- *92. Rev. to l., star above pyramid; below, \odot above Γ . 17.18 \rightarrow
- *93. Rev. to l., star above pyramid above X; below, ⊙ above Γ. 17.19
- *94. Rev. as 93. 17.13

Pella

- *95. Rev. to 1., Boeotian shield. Cf. Philippe 532-34. 17.12 \leftarrow
- *96. Rev. below, torch. 17.03
- *97. Rev. below, oenochoe. 17.11 (a cast at the ANS)
- *98. Rev. to 1., ₹; below, 🕅 . 16.94.



² The coin is from the same obverse die as one in the general collection with fulmen over I and ME below but the sequence of issues is uncertain.

Paeonia

- *99. Rev. to l., \wedge and torch. 17.10 \downarrow
- *100. Rev. to l., forepart of griffin and \maltese . 17.15 \leftarrow
- *101. Rev. to l., $\stackrel{\leftarrow}{\text{H}}$. 17.16 \rightarrow
- *102. Rev. to l., Λ and cornucopiae. 17.23 \downarrow

Corinth³

- 103. Rev. to l., chimaera; below, NO. Noe 24. 17.09 \leftarrow
- 104. Rev. to l., Elpis; below, NO. Noe 26. 17.06 \(\)
- 105. Rev. to l., aplustre; below, NO. Noe 28. 17.09
- 106. Obv. of 105. Rev. to 1., aplustre; below, ΔO . Noe 29. 17.13 \rightarrow
- 107. Rev. as 106. Noe 29. 17.11
- 108. Rev. to l., aplustre; below, ΔE . Noe 30. 17.15 \leftarrow
- 109. Rev. as 108 but with BASIAEQS in exergue. Noe 30. 17.10 \rightarrow
- 110. Rev. to l., cornucopiae; below, NO; in exergue, BASI Λ E Ω S. Noe 35. 17.20 \downarrow
- 111. Obv. of 110. Rev. as 110. Noe 35. 17.11 \(\)

Lampsacus

- 112. Rev. to l., KI; below, M. T-B 15. 17.04 \rightarrow
- 113. Rev. to l., KI; below, N. T-B 15. 17.10 1

Sardes

- 114. Rev. to l., $\stackrel{\leftarrow}{m}$ above star. T. 386e. 16.98 \rightarrow
- 115. Rev. to l., \odot ; below, \triangle . T. 407. 16.89 \leftarrow

Miletus

116. Rev. to l., P; below, bipennis. T. 246b. 16.82

Salamis

- *117. Rev. $BA\Sigma I \wedge E\Omega\Sigma$; to l., Π ; below, ΔI . 17.06
- *118. Rev. $BA\Sigma I \Lambda E\Omega\Sigma$; to l., Σ ; below, Γ . 17.13
- ³ As attributed by Hyla Troxell, "The Peloponnesian Alexanders," ANSMN 17 (1971), pp. 41–66, and especially pp. 45–46; hereafter cited as Troxell.



Myriandrus

119. Rev. BASIAE Ω S; to 1., BA; below, pellet above and A under strut. Demanhur 2891. 17.17 \leftarrow

Aradus

- 120. Rev. BASIΛEΩΣ; to l., caduceus; below, \clubsuit . Demanhur 3467. 17.01
- *121. Rev. ΒΑΣΙΛΕΩΣ ΦΙΛΙΓΓΟΥ; to l., X combined with horizontal fulmen; below, I. Cf. WSM, pl. 43, A-C. 17.04 ←
- *122. Rev. BASIAE Ω S; to l., \square and anchor; below, \square . Cf. WSM, pl. 43, E. 17.12
- *123. Rev. BASIAE Ω S; to l., NE and anchor; below, Γ . Cf. WSM, pl. 43, E. 17.09 \rightarrow
- *124. Rev. BA Σ I \wedge E Ω Σ ; to l., \not and anchor; below, Γ . Cf. WSM, pl. 43, E. 17.22 \downarrow
- 125. Rev. as 124. 16.93 ↓

Marathus

- *126. Rev. BASIΛΕΩΣ ΦΙΛΙΓΓΟΥ; to l., \rlap{A} . 17.23 \downarrow
- *127. Rev. ΒΑΣΙΛΕΩΣ ΦΙΛΙΓΓΟΥ; to l., Σ; below, Λ. Cf. WSM, pl. 43, G. 17.09 ↓

Byblus

- 128. Rev. to 1., A. Demanhur 3624. 16.89
- 129. Rev. as 128. 17.10

Tyre

- 130. Rev. to l., A in circle; below, in circle. Tyrus 2. 17.12
- 131. Rev. to l., club in circle; below, X. Tyrus 23. 17.12 \bot
- 132. Obv. of 131. Rev. to l., club in circle, below, ₱ in circle. Tyrus 25. 17.09

Ake

133. Rev. to l., /-= (year 31). Ake 34. 17.12 \downarrow



Babylon

- 134. Rev. BASIΛΕΩΣ ΦΙΛΙΓΓΟΥ; to l., M; below, B. 17.02 (a cast at the ANS)
- 135. Rev. BASIAEQS; to l., \mathbb{M}° in wreath; below, H. 16.90 \downarrow
- 136. Rev. $BA\Sigma I \Lambda E\Omega\Sigma$; to I., M in wreath; below, MI. 16.99 \bot
- 137. Rev. as 136. $17.05 \leftarrow$
- 138. Rev. BASIAEQS; to 1., MI; below, M in wreath. 16.99 \downarrow
- 139. Rev. as 138. 17.10
- 140. Rev. BASIΛEΩΣ; to l., MI and grapes; below, \mathbf{M}^{\bullet} in wreath. 17.02 \leftarrow
- 142. Rev. BASIAEQS; to l., MI and club; below, \bowtie in wreath.16.98 \rightarrow
- 143. Rev. $BA\Sigma I \wedge E\Omega\Sigma$; to l., ME and club; below, M. 17.07
- 144. Rev. BASIAE Ω S; to l., M in wreath; below, M in circle, 17.081
- 145. Rev. BASIAEQS; to l., \mathbb{H}^{2} in wreath; below, \mathbb{H}^{2} . 17.00 \leftarrow

Imitation

*146. Rev. as 135. 15.23 \leftarrow

Uncertain

- *147. Rev. no marking. 17.07
- *148. Rev. below, pellet above strut. 16.99
- *149. Rev. to l., dolphin; below, \triangle . 17.07 \downarrow
- *150. Rev. to l., dolphin; below, NO. 17.13 \downarrow
- *151. Rev. to l., fulmen; below ΔO . 17.11 \rightarrow
- *152. Rev. to l., aplustre. 16.97
- *153. Rev. to l., amphora. 17.14
- *154. Rev. $BA\Sigma I \wedge E\Omega\Sigma$; to l., wreath. 16.84 \downarrow
- *155. Rev. to l., M in wreath; below, Φ l. 17.10 \leftarrow
- *156. Obv. of 155. Rev. to l., A above sphinx; below, M in circle. 17.02
- *157. Rev. to l., \□ . 17.14
- *158. Rev. BAΣIΛΕΩΣ; to l., HP in wreath; below, \(\bar{\pi} \) in circle. 16.72
- *159. Rev. $BA\Sigma I \wedge E\Omega\Sigma$; to l., X in wreath. 16.97 \downarrow
- *160. Rev. BASIΛΕΩΣ ΦΙΛΙΓΓΟΥ; to 1., pentagram. 16.92 \downarrow
- *161. Rev. BAΣIΛΕΩΣ ΦΙΛΙΓΓΟΥ; to l., \triangle A above π ; below, I. 17.00 \searrow



ALEXANDERS

Drachms⁴

Sardes

162-217. Fourth century

Lampsacus

218–278. Fourth century

A bydus

279–331. Fourth century

Teos

332-351. Fourth century

Colophon

352–449. Fourth century

Miletus

450-477. Fourth century and very early third

Magnesia

478-535. Fourth century

*536. Rev. to l., ⋈; in exergue, maeander. 4.27

*537. Rev. to l., M above prancing horse; in exergue, maeander. 4.25

Priene

*538. Rev. to 1., trident above Γ Pl and Bl. Regling 39A (same dies). 4.28

*539. Obv. of 538. Rev. to 1., trident above Γ Pl and Γ . Regling 40 (same dies). 4.24

⁴ Fourth-century strikings of the first seven mints are not individually listed since the record is or will be available elsewhere. For Sardes and Miletus see Thompson (above, n. 1), p. 98. Similar breakdowns will be provided in subsequent publications dealing with the other mints. As in the case of Sardes, early Lysimachi with Alexander types will be included in the summaries: Lampsacus 4, Abydus 1, Colophon 22 and Magnesia 1.



Erythrae

- *540. Rev. to l., \mathfrak{M} in wreath above club. 4.21
- *541. Rev. to l., ZHQI and club; below, Σ . 4.18

Ephesus

- **542-543. Rev. to l., bee between E and Φ . 4.18, 4.13
- *544. Rev. to l., bee above ΕΦΕ. 4.26

Chios

*545. Rev. to l., ₩ above grapes. Bauslaugh, p. 3, 6-7. 4.11

Mylasa⁵

- 546-548. Rev. to l., \Re ; below, KA. 4.19, 4.20, 4.16 $\rightarrow \leftarrow \uparrow$
- 549-553. Rev. to l., \(\Omega\); below, EY. 4.13, 4.24, 4.16, 4.14, 4.16. ↑↓↓↓↑
- 554-557. Rev. to l., $\boldsymbol{\Omega}$; below, KH. 4.17, 4.22, 4.17, 4.20 $\uparrow \leftarrow \uparrow \rightarrow$
- *558. Rev. to l., A. 4.17
- *559. Obv. of 558. Rev. to 1., A . 4.18
- *560. Rev. to l., **a** . 4.22
- *561. Rev. to l., \square ; below, Γ . 4.44
- ***562-565. Rev. to 1., \(\overline{M}\) or \(\overline{m}\). 4.18, 4.37, 3.94, 4.15
- **566-567. Same obverse die. Rev. to l., Artemis Kindyas. 4.20, 4.15

Side⁶

- **568-569. *Rev.* below, A. 4.37, 4.20
- *570. Inscription uncertain. Rev. to l., pomegranate; below, \(\Gamma\). 3.79
- *571. Rev. $\Phi | \Lambda | \Gamma \Gamma \Theta$; to I., pomegranate; below, Γ . 4.05 \downarrow
- *572. Rev. $\Phi | \Lambda | \Gamma \Gamma O Y$ (?); to l., pomegranate. 4.10
- ⁵ The sequence at Mylasa is slightly more complicated than that outlined in M. Thompson, "The Alexandrine Mint of Mylasa," NumAntClas 10, pp. 207-17. When coinage resumes in the third century there seems to have been initial uncertainty as to the control. At first the marking is simply A , replaced by A . On later dies the A is recut with a sketchy version of the subsequent N or M control and $^{\Gamma}$ is added below the throne (nos. 558-61).
- ⁶ For the attribution see M. Thompson, "The Cavalla Hoard (IGCH 450)," ANS MN 26 (1981), pp. 44-48.



Salamis

573-575. Rev. to 1., bow. Cf. Demanhur 2445-2543. 4.17, 4.10, 4.17

Aradus

576. Rev. to l., Σ ; below, \clubsuit . Cf. Demanhur 3334. 4.13 \rightarrow

Babylon

577. Rev. ΦΙΛΙΓΓΟΥ; to 1., wheel above M ; below, M. Cf. Demanhur 4609. 4.05 ↓

Carrhae

*578. Rev. to l., $M\odot$ above fish; below, M. WSM, p. 41, 14. 4.12

Cardia?

- *579. Rev. below, lion's head to l. $4.27 \downarrow$
- *580. Obv. of 579 recut (?). Rev. to l., lion's head facing; below, barley-corn. 4.14 \(\psi\)

Uncertain

- *581. Rev. to l., aplustre. 3.99
- *582. Obv. of 581. Rev. as 581. 4.17
- *583. Rev. as 581. 4.15
- *584. Obv. of 583. Rev. as 581. 4.17
- *585. Obv. of 583. Rev. as 581. 4.10
- *586. Rev. as 581. 4.12
- *587. Rev. as 581. 4.16
- *588. Rev. to 1., O \underset. 4.20
- *589. Rev. of 588. 4.16
- *590. Obv. of 589. Rev. below, O \(\) \(\) 4.19
- *591. Obv. of 589. Rev. below, IK. 4.15
- *592. Rev. $\Phi | \Lambda | \Gamma \Gamma O Y$; to l., star; below, $\Phi | \Lambda | \Gamma \Gamma O Y$
- *593. Obv. of 592. Rev. as 592. 4.17
- *594. Rev. to l., shield; below, grapes. 4.12
- *595. Obv. of 594. Rev. as 594. 4.22
- *596. Rev. to l., V. 4.11
- *597. Obv. of 596. Rev. to l., N; below, horse's leg. 4.23
- *598. Rev. to l., M. 4.51



- *599. Obv. of 598. Rev. to l., pentagram. 3.97
- *600. Rev. to l., forepart of lion. 4.09
- *601. Rev. no visible marking. 4.24 \(\)
- *602. Rev. as 601. 4.05
- *603. *Rev.* as 601. 4.01
- *604. Rev. ΦΙΛΙΓΓΟΥ; no marking. 4.14
- *605. Rev. below, \triangle 4.05 \perp
- *606. Rev. to l., Γ . 4.25
- *607. Rev. to l., **\Lapprox** 4.15
- *608. Rev. to l., M. 4.12
- *609. Rev. below, uncertain marking. 4.27
- *610. Rev. to l., T (?); below, Δ . 4.18
- *611. Rev. below, torch. 4.17 \downarrow
- *612. Rev. to l., shell. 4.19
- *613. Rev. to l., lion's head; to r., grain ear. 4.26 1
- *614. Rev. to l., uncertain monogram; below, bee. 4.18
- *615. Rev. to l., **\(\Gamma\)**; below, **A**. 4.25
- *616. Rev. to 1., M above wreath. 3.89
- *617. Rev. to l., \(\simeq \); below, ivy leaf. 4.14
- *618. Rev. to l., A above coiled serpent. 4.20
- *619. Rev. to l., A above grapes. 4.17.
- 620. Rev. to 1., X . 4.22
- *621. Dies of 620. 4.25
- *622. Rev. to l., forepart of dog or wolf. Possibly barbaric. 3.89

Barbaric

- *623. Rev. to l., 2; below, A. Imitating Lampsacus. Struck over another Alexander drachm (part of profile visible). 4.21
- *624. Rev. to l., forepart of Pegasus; below, Al. Imitating Lampsacus. 4.28
- 625. Dies of 624. 4.29
- *626. Rev. to l., lion's head l. 4.38
- *627. Obv. of 626. Rev. to l., chelys. Imitating Colophon? 4.37
- *628. Rev. of 627. 4.05 \forall
- *629. Rev. to l., K; below, crescent. Imitating Colophon. 3.67
- *630. Rev. to l., \(\mathbf{E}\); below, rose (?). Imitating Sardes. 4.52



- *631. Rev. to l., $\stackrel{\checkmark}{\bowtie}$. 4.26 \leftarrow
- 632. Dies of 631. 4.31 ←
- *633. Rev. to l., A in wreath. 3.18
- *634. Rev. to l., turtle (?) l. 4.27
- *635. Rev. below, Δ . 3.22
- *636. Rev. to l., caduceus; below, A. 3.86
- *637. Rev. to l., dolphin; below, pentagram. 4.11
- *638. Rev. to l., small animal's head (?) above 🛪; below, 🗖 . 4.15 📗
- *639. Rev. no visible marking. 4.15
- *640. Rev. as 639, 4.04

LYSIMACHI

Lysimachia

Alexander Types and Legend

Drachm

641. Rev. to l., lion's forepart over \(\mathbb{E}\); below throne, ₹.

Th. 5.7 3.91

Alexander Types with Lysimachus Legend

Drachm

642. Rev. to l., lion's forepart over Α ; below throne, Φ. Th. 7. 4.33

Lysimachus Types

- *643. Rev. to 1., Φ; on throne, △1. Th. 10. 16.99
- *644. Rev. to l., † ; in exergue, lion's head. Th. 11. 17.08



⁷ Th. references are to M. Thompson, "The Mints of Lysimachus," Essays Robinson, pp. 163-82. As noted above (n.4) early Lysimachi with Alexander types from Sardes, Lampsacus, Abydus, Colophon and Magnesia are not included in the catalogue that follows. In a few cases the monograms given here vary slightly from the forms in Essays Robinson. All such coins are illustrated.

- 645. Dies of 644. 17.08
- *646. Rev. to l., \$; in exergue, ∑ . Th. 13. 17.09
- *647. Rev. to l., 🗹 . Th. 14. 16.91
- *648. Rev. to l., facing lion's head over **∑**. Th. 15. 17.06
- *649. Rev. to l., lion's head; on throne, ♦. Th. 16. 17.06
- 650. Rev. as 649. 16.99
- *651. Rev. to l., ♦; on throne, crescent and facing Helios head. Th. 17. 16.97

Sestus

Alexander Types with Lysimachus Legend

Drachms

- 652. Rev. to 1., lion's forepart over △1 in circle; below, 📅 . Th. 21. 4.24
- 653. Rev. of 652. 4.13
- 654. Obv. of 653. Rev. to 1., lion's forepart over Δl in circle; below, cornucopiae. Th. 21. 4.18 \rightarrow

Lysimachus Types

- *655. Rev. to l., lion's forepart. Th. 23. 17.05
- 656. Obv. of 655. Rev. as 655. 17.07 A
- *657. Obv. of 655. Rev. to 1., dolphin; on throne, ▶ 1. Th. 24. 17.13 \(\)
- 658. Rev. as 657. 17.07 &
- *659. Obv. of 674 (Lampsacus).* Rev. to 1., dolphin; on throne, 🔀. Th. 24. 17.11 认
- *660. Rev. to l., \mathbb{M} ; on throne, \mathbb{M} . Th. 25. 17.12 \rightarrow
- *661. Rev. to 1., \(\mathbb{E}\); on throne, \(\mathbb{X}\). Th. 26. 17.10 \(\frac{1}{2}\)
- *662. Rev. to l., ivy leaf. Th. 27. 16.99



⁸ The die link between 659 of Sestus and 674 of Lampsacus is not noted in *Essays Robinson*.

- *663. Rev. to l., axe. Th. 28. 17.24 / *664. Obv. of 663. Rev. to l., flower. Th. 29. 17.08 / 665. Rev. as 664. 17.08 /
- 666. Obv. of 665. Rev. as 664. 16.87 /
- 667. Obv. of 665, Rev. as 664. 17.21 /
- 668. Rev. as 664. 16.93 /
- *669. Rev. as 664. 17.19 1
- *670. Obv. of 669. Rev. to l., P. . Th. 30. 16.90 /
- *671. Rev. to l., bee with ear of grain. Th. 31. 17.06 /

Lampsacus

Lysimachus Types

- *672. Rev. to l., lion's forepart. Th. 40. 17.26 \tag{7}
- *673. Rev. to 1., race torch; on throne, \square in circle. Th. 41. 17.11 \rightarrow
- *674. Obv. die of 659 (Sestus). Rev. to 1., A in circle; to r., race torch.
 Th. 42. 17.09
- *675. Rev. to 1., torch; on throne, star. Th. 43. 17.02 \(\dagger
- 676. Obv. of 675. Rev. as 675. 17.10 \forall
- 677. Rev. as 675. 16.92
- 678. Rev. as 675. 16.61 \(\cdot \)
- 679. Rev. as 675. 16.92 \tag{8}
- *680. Rev. to 1., H; on throne, crescent. Th. 45. 17.13
- 681. Obv. of 680. Rev. as 680. 17.14
- *682. Rev. as 680. 17.09
- 683. Rev. as 680. 17.27 \
- *684. Obv. of 682. Rev. to l., H; on throne, star. Th. 45. 17.08
- 685. Obv. of 683. Rev. as 684. 17.13
- *686. Obv. of 680. Rev. to 1., star and H. Th. 46. 17.01
- 687. Rev. as 686. 17.02
- *688. Rev. as 686. 16.86
- ⁹ The symbol as drawn on Newell's ticket is an axe but as Hyla Troxell points out it is more likely an ivy leaf distorted by a die break.



¹⁰ See above, n. 8.

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*689. Rev. to l., star and H. Th. 46. 16.88
*690. Obv. of 689. Rev. to l., H; in exergue, crescent. Th. 47. 17.16
 691. Obv. of 689. Rev. to I., \(\mathbf{H}\); in exergue, crescent. Th. 47. 17.02
*692. Obv. of 688. Rev. to 1., H; in exergue, crescent. Th. 47. 17.12
 693. Rev. as 692. 17.21
 694. Rev. as 692. 17.13
 695. Obv. of 694. Rev. as 692. 17.00
 696. Rev. as 692. 17.06 ↓
 697. Rev. as 692. 17.03 \downarrow
 698. Rev. as 692. 17.07 ✓
 699 Rev. as 692. 17.30
 700. Rev. as 692. 17.07
 701. Rev. as 692. 17.10
 702. Rev. as 692. 16.75
 703. Obv. of 702. Rev. as 692. 17.18
 704. Rev. as 692. 16.95 N
 705. Rev. as 692. 17.08 \tag{7}
 706. Dies of 705. 17.04 \
*707. Rev. as 692. 17.07
*708. Rev. as 692. 17.06
 709. Obv. of 708. Rev. as 692. 17.16
 710. Obv. of 708. Rev. as 692 17.08
*711. Obv. of 707. Rev. to l., aplustre and H. Th. 48. 16.84 \(\frac{1}{2}\)
 712. Obv. of 708. Rev. as 711. 16.90
 713. Rev. as 711. 16.99 \
 714. Rev. as 711. 17.04 \( \)
*715. Obv. of 708. Rev. to l., \(\pm\); in exergue, crescent. Th. 49.
            16.99
 716. Obv. of 708. Rev. as 715. 17.03
 717. Rev. as 715. 17.21
 718. Obv. of 717. Rev. as 715. 16.90 \( \cdot \)
 719. Obv. of 717. Rev. as 715. 16.80
 720. Obv. of 717. Rev. as 715. 17.07
*721. Rev. as 715. 16.74
 722. Obv. of 721. Rev. as 715. 17.29
*723. Rev. as 715. 17.18
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724. Rev. as 715. 17.02
 725. Rev. as 715. 17.07
 726. Obv. of 725. Rev. as 715. 16.95
 727. Obv. of 725. Rev. as 715. 17.12
 728. Rev. as 715. 17.09
 729. Rev. as 715. 17.02
 730. Rev. as 715. 17.18
 731. Obv. of 730. Rev. as 715. 17.06
 732. Rev. as 715. 17.13
 733. Rev. as 715. 17.19
 734. Obv. of 733. Rev. as 715. 17.36
 735. Obv. of 733. Rev. as 715. 16.91
 736. Obv. of 733. Rev. as 715. 17.02
 737. Obv. of 733. Rev. of 736. 17.19
 738. Rev. as 715. 16.97
 739. Obv. of 738. Rev. as 715. 16.98
 740. Rev. as 715. 16.98
 741. Dies of 740. 17.13
 742. Rev. as 715. 16.97
 743. Rev. as 715. 17.23
 744. Rev. as 715. 17.11
 745. Rev. as 715. 16.68
 746. Obv. of 745. Rev. as 715. 17.12
 747. Rev. as 715. 16.80
 748. Rev. as 715. 16.56
 749. Rev. as 715. 16.91
 750. Rev. as 715. 16.99
 751. Rev. as 715. 17.15
 752. Rev. as 715. 17.02 A
 753. Rev. as 715. 16.90
 754. Rev. as 715. Plated. 16.64
*755. Obv. of 723. Rev. to 1., herm and \triangle . Th. 50. 16.76
 756. Obv. of 723. Rev. as 755. 16.92
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757. Obv. of 724. Rev. as 755. 17.02 758. Obv. of 729. Rev. as 755. 17.04 759. Obv. of 730. Rev. as 755. 17.04 760. Obv. of 733. Rev. as 755. 17.19

- 761. Obv. of 738. Rev. as 755. 16.88
- 762. Obv. of 740. Rev. as 755. 16.97
- 763. Obv. of 740. Rev. as 755. 16.97
- 764. Obv. of 743. Rev. as 755. 17.05
- 765. Rev. as 755. 16.95
- 766. Obv. of 748. Rev. as 755. 17.08
- 767. Rev. as 755. 16.78
- 768. Rev. as 755. 17.00
- 769. Obv. of 753. Rev. as 755. 17.16
- 770. Rev. as 755. 17.01
- 771. Rev. as 755. 16.95
- *772. Obv. of 721. Rev. to l., K and \(\frac{1}{2} \). Th. 52. 16.98 \(\frac{1}{2} \)
- *773. Rev. to 1., \(\frac{1}{2}\); in exergue, crescent. Th. 54. 17.06
- *774. Rev. to l., M; in exergue, crescent. Th. 56. 17.03
- 775. Rev. as 774. 17.02
- *776. Rev. to l., herm and M. Th. 58. 17.07
- 777. Rev. to l., herm; and K. Th. 59. 16.95
- *778. Rev. as 777. 17.07
- 779. Dies of 778. 16.92
- 780. Obv. of 778. Rev. as 777. 16.89
- *781. Obv. of 778. Rev. to l., K over crescent. Th. 60. 17.07
- 782. Rev. to l., M over crescent. Th. 61. 17.21
- 783. Rev. as 782. 17.04
- *784. Rev. as 782. 17.32 A
- 785. Obv. of 784. Rev. as 782. 17.02
- *786. Obv. of 784. Rev. to 1., M over star. Th. 61. 17.14

Abydus

Lysimachus Types

- *787. Rev. to l., griffin's head and M. Th. 70. 16.98
- 788. Obv. of 787. Rev. as 787. 17.15
- 789. Obv. of 787. Rev. as 787. 16.98
- 790. Rev. of 789. 17.03



- *791. Rev. to l., ♠ over griffin's head. Th. 72. 17.04
- 792. Dies of 791. 17.15
- *793. Obv. of 791. Rev. to 1., griffin's head over X and A . Th. 73. 17.09
- *794. Rev. to l., griffin's head and □. Th. 74. 16.95
- *795. Rev. to l., griffin's head and 🛱 . Th. 75. 17.38
- 796. Obv. of 795. Rev. as 795. 17.21
- 797. Obv. of 795. Rev. as 795. 17.09
- *798. Obv. of 795. Rev. to 1., griffin's head and M. Th. 75. 17.06. The markings are those of 789-90: fabric, obverse style, and die links, make the distinction.
- 799. Obv. of 795. Rev. as 798. 17.25
- 800. Obv. of 795. Rev. as 798. 17.18
- *801. Obv. of 795. Rev. to 1., griffin's head and ₩; in exergue Tl.
 Th. 76. 17.13
- *802. Obv. of 795. Rev. to l., griffin's head and erasure of ऒ ; in exergue, Tl and ऒ . Th. 77. 17.14

Sardes

Alexander Types and Legend

Tetradrachm

803. Rev. to 1., 8 over lion's forepart; below throne, m. Th. 78. 16.96 \rightarrow

Lysimachus Types and Legend

- *804. Rev. to l., M; in exergue, ∆ and branch. Th. 84. 17.06
- *805. Rev. to 1., **☆**; below legend to r., **△**. Th. 85. 17.12
- *806. Rev. to 1., PE in circle; in exergue, △. Th. 86. 17.08
- 807. Rev. as 806. 17.00
- 808. Rev. as 806. 17.06
- 809. Obv. of 808. Rev. as 806. 17.00 \(\cdot \)
- 810. Rev. as 806. 17.04 \



- *811. Rev. to 1., PE; in exergue, \(\mathbb{\Z}\). Th. 86. 17.09 \(\frac{\pi}{\chi}\)
- *812. Obv. of 811. Rev. to 1., PE; in exergue, A. Th. 86. 17.10

MARGARET THOMPSON

- 813. Rev. as 812. 17.00 \(\cdot \)
- 814. Obv. of 813. Rev. as 812. 17.12
- 815. Obv. of 813. Rev. as 812. 17.07 \(\cdot \)
- *816. Rev. as 812. 16.94 \\$
- *817. Obv. of 816. Rev. to 1., PE; in exergue, \(\Gamma\). Th. 87. 17.11
- 818. Rev. as 817. 17.11
- 819. Obv. of 818. Rev. as 817. 17.00
- 820. Rev. to l., PE and Q. Th. 89. 17.13
- 821. Obv. of 820. Rev. as 820. 17.07
- 822. Rev. as 820. 17.18
- *823. Rev. as 820. 17.05
- *824. Obv. of 823. Rev. to l., the preserved right-hand portions of two monograms, possibly \aleph over \aleph . Th. 90. 17.16

Magnesia

Lysimachus Types and Legend

- *825. Rev. to l., M in wreath. Th. 101. 17.06
- 826. Rev. as 825. 17.11
- 827. Rev. to r., 11 in wreath. Th. 101. 17.10
- 828. Rev. to r., ₱ in wreath; to inner l., ∑. Th. 102. 17.15
- 829. Obv. of 828. Rev. as 828. 17.08 \(\cdot \)
- 830. Rev. as 828. 17.18
- 831. Rev. as 828. 17.00
- 832. Rev. to 1., \triangle and Φ . Th. 103. 17.07
- *833. Rev. as 832. 17.12
- *834. Obv. of 833. Rev. to l., \(\hat{\pma}\); in exergue, \(\bar{\pma}\). Th. 104. 16.91
- *835. *Rev.* to l., maeander and ₩ . Th. 105. 17.20
- 836. Rev. to 1., P over trident. Th. 108. 17.16
- 837. Rev. to l., P; in exergue, maeander. Th. 109. 17.00
- 838. Rev. as 837. 17.32
- *839. Obv. of 838. Rev. as 837. 17.21



- *840. Obv. of 838. Rev. to l., filleted race torch (cut over P); in exergue, maeander. Th. 110. 17.01
- 841. Obv. of 838. Rev. as 840, but without the recutting. 17.13
- *842. Rev. in exergue, maeander. Th. 111. 17.07
- 843. Dies of 842. 17.15. (A cast at the ANS)
- 844. Rev. to l., race torch; in exergue, maeander. Th. 112. 17.04 /
- 845. Rev. as 844. 16.98
- 846. Obv. of 845. Rev. as 844. 17.23
- 847. Rev. of 846. 17.11
- 848. Rev. to l., M. Th. 113. 16.94
- 849. Obv. of 848. Rev. as 848. 16.92
- 850. Obv. of 848. Rev. to l., M. Th. 113. 17.24
- *851. Rev. to l., MP. Th. 113. 17.04
- *852. Obv. of 851. Rev. to l., filleted race torch and T; in exergue, maeander. Th. 114. 17.03
- *853. Obv. of 851. Rev. to 1., filleted race torch and M. Th. 115. 17.02
 - 854. Rev. as 853. 17.01
- 855. Obv. of 854. Rev. to 1., filleted race torch and M. Th. 115. 16.99
- 856. Obv. of 855. Rev. as 855. 17.01 1
- 857. Rev. of 856, slightly recut. 17.21 /
- 858. Rev. as 855. 16.80 1
- *859. Rev. as 855. 16.90
- *860. Obv. of 859. Rev. to I., filleted race torch and \mathfrak{M} . Th. 115, 16.98
- 861. Obv. of 859. Rev. as 860. 16.98
- 862. Rev. as 860. 17.16
- *863. Obv. of 859. Rev. to l., M. Th. 116. 16.99

Drachm

864. Rev. to l., trident and P; on throne, ornament. Th. 118. 4.29 /

Colophon

Alexander Types with Lysimachus Legend

- *865. Rev. to l., lion forepart over race torch; below throne, pentagram.
 Th. 122. 16.90
- 866. Rev. as 865. 17.21



Mytilene

Alexander Types with Lysimachus Legend

Drachm

867. Rev. to l., chelys; below throne, M. Th. 132. 4.10

Lysimachus Types

Tetradrachms

*86811 Rev. to l., chelys; in exergue, M. Th. 133. 16.97

869. Obv. of 868. Rev. to l., chelys: in exergue, M. The 133. 17.07

*870. Rev. to 1., ₹ over chelys; in exergue, ∆; on throne, small ⊙. Th. not, but see p. 176 and pl. 22, A (this coin). The obverse was also used at Clazomenae (pl. 22, B).

Alexandria Troas

Lysimachus Types

Tetradrachms

*871. Rev. to l., horse's head; on throne, star. Th. 148. 17.17

872. Obv. of 871. Rev. as 871. 17.12 \(\)

*873. Rev. to 1., ME; on throne, ⊙ E. Var. Th. 156. 16.88 →

874. Obv. of 873. Rev. to 1., №; in exergue, Œ. Th. 156. 16.91 \$\darksquare\$

*875. Rev. to l., Γ ; in exergue, horse's head. Th. 158. 17.05

*876. Rev. to 1., A over bee; in exergue, ME. Th. 160. 17.06

Ephesus

Lysimachus Types

Tetradrachms

877. Rev. to l., bee; in exergue, **E**. Th. 166. 17.21 **/**

878. Rev. as 877. 17.32

¹¹ Although not noted in *Essays Robinson*, this obverse die was also used at Lampsacus (Plate 21, A, is a coin in Paris).



- 879. Rev. as 877. 17.22 1
- *880. Rev. as 877. 17.15
- *881. Obv. of 880. Rev. to l., bee; in exergue, \exists . Th. 166. 17.07
- *882. Rev. to l., bee; on throne, £. Th. 167. 17.23

Drachms

- *883. Rev. to l., bee between E and Φ. Th. 168. 4.26
- *884. Rev. as 883. 4.28
- *885. Rev. to l., tripod; in exergue, €. Th. 170. 4.21
- *886. Rev. to l., spear head; on throne, A. Th. 173. 4.22 \(\gamma\)
- *887. *Rev.* as 886. 4.29 \downarrow
- 888. Rev. to 1., cithara; on throne, A. Th. 174. 4.21 \$\nsigma\$
- *889. Rev. as 888. 4.32 \

Heraclea

Lysimachus Types

Tetradrachms

- 890. Rev. in exergue, club. Th. 177. 17.09
- 891. Rev. as 890. 17.05
- 892. Rev. as 890. 17.03
- 893. Obv. of 892. Rev. as 890. 16.99
- 894. Rev. of 893. 17.11
- *895. Rev. as 890. 17.13
- *896. Rev. on throne, H; in exergue, club. Th. 178. 16.89

Cius

Lysimachus Types

- *897. Rev. to l., \(\beta\); below throne, club; in exergue, ear of grain. Th. 179. 17.10
- *898. Obv. of 897. Rev. to 1., 1894; below throne, club; in exergue, ear of grain. Th. 180. 17.19. The obverse link is not noted in Th.



- *899. Rev. to l., \$\pi\$ and \$\textit{\textit{T}}\$; below throne, club; in exergue, ear of grain.

 Var. Th. 181. 17.11
- *900. Rev. to l., ★ and 🎮 over ME; in exergue, club. Th. 183. 17.10 🖊

Amphipolis

Lysimachus Types

- *901. Rev. to l., lion's head. Th. 186. 17.18 \rightarrow
- 902. Rev. to l., caduceus; to r., bee. Th. 190. 17.07
- *903. Rev. as 902. 17.11
- *904. Obv. of 903. Rev. to l., caduceus; to r., K. Th. 191. 17.09
- *905. Rev. to l., caduceus with handle; to r., bee. Th. 192. 17.10
- *906. Obv. of 905. Rev. to 1., caduceus with handle; to r.,

 17.04

 ✓
- 907. Rev. as 906. 17.09 \
- 908. Rev. as 906. 17.09 \leftarrow
- 909. Rev. as 906. 17.16 \(\)
- *910. Rev. to l., caduceus with handle; to r., ME. Th. 194. 17.13 \
- *911. Rev. to l., caduceus with handle; to r., E. Th. 195. 17.09
- 912. Rev. as 911. 16.91
- 913. Rev. as 911. 17.26
- *914. Rev. to l., caduceus with handle; to r., \blacktriangle . Th. 198. 17.21 \rightarrow
- *915. Rev. to l., M (cut over caduceus with handle); to r., A Th. 199.

 17.38. The left-hand monogram is described in Th. only as cut over a caduceus.
- 916. Rev. to l., **M**; to r., **A**. Th. 199. 17.26 /
- 917. Rev. to l., \mathfrak{M} ; to r., \mathfrak{P} (?). Th. 200. 17.23 \leftarrow
- *918. Rev. to l., \mathbf{M} ; to r., \mathbf{M} . Th. 200. 17.14 \rightarrow
- *919. Rev. to l., \Re ; to r., \Re . Th. 201. 17.08 \rightarrow
- *920. Rev. to 1., 🛱; to r., 🖼 . Th. 202. 17.19 ↓
- *921. Rev. to 1., 🕅; to r., ≮; in exergue, 🖂. Th. 208. 17.18



Pergamum

Lysimachus Types

Tetradrachms

- *922. Rev. to l., crescent and cult image; in exergue, E. Th. 218. 17.04
- *923. Obv. below neck, K. Rev. to l., crescent and cult image; in exergue, 1. Th. 220. 16.68
- *924. Obv. as 923. Rev. to 1., crescent and cult image; in exergue, E. Th. 224. 16.95
- *925. Obv. as 923. Rev. to l., cult image; in exergue, crescent. Th. 228. 17.10
- 926. Obv. of 925. Rev. as 925. 17.12
- *927. Obv. as 923. Rev. to l., Γ and cult image; in exergue, crescent. Th. 229. 17.06

Smyrna

Lysimachus Types

Tetradrachm

*928. Rev. to 1., Φ and turreted female head. Th. 237.12 17.04 \rightarrow

Pella

Lysimachus Types

- 929. Rev. to l., PP; to r., √. Th. 243. 17.23 \
- *930. Rev. to l., AP; to r., trace of ★/. Th. 243. 17.24
- *931. Obv. of 930. Rev. to 1., \(\infty \); above arm, \(\infty \). Th. 244. 17.15 \(\forall \)



¹² In Essays Robinson it was noted that there were no Lysimachi of Smyrna in the Armenak Hoard. The coin catalogued here was among those selected by Adra Newell under the terms of Edward Newell's will; it came back to the ANS only after Essays Robinson had been published.

- 932. Rev. to l., \checkmark ; above arm, \ref{m} . Th. 244. 17.18 \rightarrow
- 933. Rev. as 932. 17.17 ←
- 934. Rev, to l., x in wreath and . Th. 246. 17.26
- *935. Rev. to inner l., H. Th. 247. 17.24
- *936. Obv. of 935. Rev. to 1., \Rightarrow and H. Th. 248. 17.17 \downarrow
- 937. Obv. of 935. Rev. to 1., H; in exergue. ★. Th. 248. 17.34 \(\sqrt{2} \)
- *938. Rev. to l., otH and otH . Th. 248. 17.10 otJ
- 939. Obv. of 938. Rev. to l., H; to r., K. Th. 248. 17.18 \leftarrow
- *940. Rev. to l., K and A. Th. 253. 17.09
- 941. Rev. as 940. 17.23 ←
- 942. Rev. as 940. $17.12 \rightarrow$
- 943. Rev. to l., A; in exergue, K. Th. 253. 17.05
- 944. Obv. of 943. Rev. to l., A; to r., K. Th. 253. 17.23 \

Perinthus

Lysimachus Types

Tetradrachms

- *945. Rev. to 1., joined foreparts of two horses over A. Th. 256. 16.99.
- 946. Obv. of 945. Rev. to l., joined foreparts of two horses over A
 Th. 256. 16.95

Aenus

Lysimachus Types

Tetradrachm

*947. Rev. to l., lion's head over enthroned cult image in form of herm; on throne, ♠. Th. 257. 17.11 →

Uncertain

Alexander Types and Legend

Drachm

*948. Rev. to l., lion's forepart. 4.03



Lysimachus Types

Tetradrachms

- *949. Rev. to l., Δ and ME. 17.19. Macedon? Cardia?
- *950. Rev. to l., M (recut, probably over △); in exergue, ME. 17.17 ↑

 Macedon? Cardia?
- *951. Rev. to l., **A**; in exergue, ⊙E. 17.11. Byzantium?
- *952. Rev. to 1., \(\mathbf{E}\); on throne, \(\otimes\). 16.92. Odessus?
- *953. Rev. to l., Ξ ; on throne, M; to r. and below, faint graffito: $\Gamma P\Omega TOY$. 16.97. Nicaea?
- *954. Obv. of 953. Rev. as 953. 17.11 \(\) Nicaea?
- *955. Rev. on throne, A. 17.23. Asia Minor.
- *956. Obv. of 955 Rev. as 955. 16.93 ↓ Asia Minor.

SELEUCUS I

Alexander Types

Seleucia on the Tigris

Seleucus Legend

Tetradrachms

- 957. Rev. to 1., ♥ ; below throne, △. ESM 4 (pl. 1, 10). 17.12 ↑
- 958. Rev. to 1., \bowtie ; below throne, BE. ESM 14. 17.09 \downarrow
- 959. Rev. to 1., No; below throne, Σ . ESM 19 (pl. 4, 12). 17.16 \rightarrow
- 960. Rev. to 1., ₹ ; below throne, M. ESM 27 (pl. 5, 8). 17.07 \$\div \text{ }

Drachm

*961. Rev. to l., anchor; above Zeus's arm, $\mbox{$\mathbb{M}$}$; in exergue, \odot . ESM 127 α (pl. 12, 13) 4.14

Ecbatana

Alexander Legend

Tetradrachms

962. Rev. to 1., \(\bigsiz\) over forepart of grazing horse; above Zeus's 1. shoulder, pellet. ESM 447ζ. 17.04 \(\bigsi\)



963. Rev. to l., \triangle over anchor over forepart of grazing horse; below throne, $\Sigma\Omega$. ESM 473 β (pl. 35, 19). 17.00 \downarrow

Drachm

964. Rev. to 1., ₺ over anchor; below throne, ₺ . ESM 466 γ . 4.09 \

Carrhae

Seleucus Legend

Tetradrachm

965. Rev. no markings. WSM 777 (pl. 5, 14). $16.98 \rightarrow$

Seleucia Pieria

Seleucus Legend

Tetradrachm

966. Rev. to l., 🖻 . WSM 895 (pl. 15, 3). 16.98

Laodicea ad Mare

Seleucus Legend

Drachm

967. Rev. to 1., dolphin over \P ; below throne, \P . WSM 1208 β (pl. 39, 12). 4.14 \leftarrow

Sardes

Seleucus Legend

Tetradrachm

*968. Rev. to l., Ξ on shield; below throne, $A\Sigma$. WSM 1350 (pl. 53, 1). 17.17 \uparrow



COMMENTARY

A lexander Tetradrachms

Of the 21 mints which can be identified with some certainty, only six contribute coins datable after 300 B.C. All issues (at the ANS and in Newell's notes) from Side, Tarsus, Amathus, Citium, Myriandrus, Byblus and Alexandria are also found in the Demanhur Hoard and therefore predate 318. Two of the Salaminian strikings are placed by Newell in the period between 316 and 306¹³ and the other two cannot be much later; they follow immediately after the rudder series in his trays and notebook. The last of the coins from Aradus and Marathus (nos. 121–27) are discussed by Newell (WSM, pp. 192–94) and assigned to the time of Philip III and the years following down to ca. 300. Tetradrachms of Lampsacus, Sardes and Sidon belong to the last decade of the fourth century while those of Ake stop in 304. Of the 56 Babylonian pieces, all but one were struck before 310 and the exception is dated ca. 307/6 B.C. by Nancy Waggoner in her preliminary study of that mint.

This leaves third-century coinage from Tyre, Miletus, Corinth, Pella, Paeonia and Amphipolis. Five of the six Tyrian specimens are dated in *Tyrus* ca. 301–290; no. 130 is slightly earlier. Two Milesian coins are from the 290s when Demetrius Poliorcetes controlled Miletus while a third is an early example of the autonomous coinage which followed his departure. Nearly one-half of the entire output of Alexander tetradrachms comes from Amphipolis and of this, two-thirds bear the *lambda* marking of Cassander; a few later coins would seem to have been struck during the ephemeral reigns of his sons (296–295 B.C.).

The ten Corinthian Alexanders recorded from Armenak represent extensive and closely linked issues which Troxell, p. 50, suggests may have been produced in connection with Demetrius Poliorcetes' preparations for re-invading Asia in 287 B.C. Nos. 99–102 belong to a sequence which has been attributed by Henri Seyrig and Nancy Waggoner¹⁴ to



¹³ E. T. Newell, "Some Cypriote 'Alexanders'," NC 1915, pp. 310-11.

¹⁴ H. Seyrig, "Monnaies hellénistiques," RN 1963, pp. 12–14; N. Waggoner, "Further Reflections on Audoleon and His Alexander Mint," RBN 1983, pp. 5–21.

a Paeonian mint under Audoleon. Seyrig gives no dates but Waggoner places the coinage between 300 and 287 B.C.

Among the Pella pieces are some which may be the latest of the Alexander tetradrachms in Armenak. One coin, noted by Newell but not purchased, is from an issue found in the Demanhur Hoard; two others with the Boeotian shield symbol are also fourth-century strikings to be equated with posthumous silver of Philip II dated by Le Rider ca. 315-310 B.C. Nos. 96-98 are third-century coins. In style the rather gross obverse heads are similar to the die used for a very rare emission carrying the name of Antigonus Gonatas. This is dated by Ralph Mathisen to 272 B.C.¹⁵ Earlier Troxell, pp. 75-76, and others had suggested approximately the same date for the Antigonid issue. Our nos. 96-98 must be roughly contemporary but they may be a few years earlier. After the death of Lysimachus, followed in 279 by that of Ceraunus, the situation in Macedonia was chaotic until Gonatas gained the throne in 277/6. It may have been during that troubled period of about three years that these coins were struck. The Antigonid issue would then in all probability have been an initial emission after Gonatas controlled the country, produced by the same die cutter responsible for nos. 97-98 and possibly 96 as well.

Concerning the uncertain issues, there is little to be said except to point out that there is no compelling reason to consider any of them later in date than the identifiable Alexanders already discussed. Nos. 149–50 belong to strikings which were originally with Newell's "Sicyon" coins but were removed by him. Although they and no. 151 are similar in their reverse lettering to issues of Noe's "Sicyon" series, they do not fit into the sequence. In all probability, however, they are from a Peloponnesian mint. 16

In Newell's trays, no. 152 with its associated drachms as well as nos. 153-54 are assigned to uncertain mints in Greece but there is no indication of the reason for the attribution.



¹⁵ R. Mathisen, "Antigonus Gonatas and the Silver Coinages of Macedonia circa 280-270 B.C.," ANSMN 26 (1981), p. 104.

¹⁶ Two of the Armenak coins (nos. 150-51) are discussed and illustrated by H. Troxell (above, n. 3), p. 77, n. 72, and pl. 19, 4-5.

A Chian origin has been proposed for no. 156 on the basis of the sphinx symbol in the left field. That this is unlikely is evident from both the non-Chian style of the obverse and the die link with no. 155.¹⁷

Nos. 157-58 may belong to mints in the Cyprus-Cilicia region while a Vienna cast from the same dies as no. 161 bears Newell's notation: "Damascus? Certainly copy of Aradus."

Alexander Drachms

With the probable exception of the three coins of Pella, the Alexander tetradrachms of Armenak seem to be no later than the second decade of the third century. The situation with regard to the drachms is rather different. For the most part they are fourth-century issues from the seven drachm mints of Asia Minor which provided small change in such abundance that it sufficed to meet the basic needs of the region throughout the reign of Lysimachus. That ruler issued comparatively little fractional currency and only eight drachms with his types were included in this hoard. There are, however, other drachms with Alexander's types and legend which are surely later than 280 B.C. and these have puzzled numismatists since they apparently contradict the often-quoted burial date of the hoard. It has been suggested that they are intrusions but there seem to me too many to make that explanation really plausible.

Most of these extraneous issues are from Ionian mints: Magnesia, Priene, Erythrae and Chios. Their condition ranges from very good to excellent;¹⁸ their obverse heads, especially those of the first three cities, are close in style. Chios is the only workshop whose third-century coinage has been the subject of a recent study and the Chian piece from Armenak is included by Bauslaugh, pp. 5–12, as an emission of Period I, covering the years 280–275.¹⁹ The situation at Magnesia provides supporting evidence for a similar date since it was one of Lysimachus' major mints and could scarcely have coined Alexandrine issues while under that ruler's control. Finally it may be noted that the later Mylasa



¹⁷ The two Armenak coins are discussed by Bauslaugh, p. 42, n. 60.

¹⁸ One exception is no. 541 from Erythrae but its condition is more likely the result of weak striking than of wear.

¹⁹ The 1927 study by Regling, pp. 37-39, assigns Priene coins of the Armenak type to the years 230-190 but this is clearly too late a date.

drachms of Armenak (nos. 562-67) are, in condition and style, comparable with those of the cited Ionian strikings, indicating a rough contemporaneity. On the evidence of the Cavalla Hoard the Carian pieces were probably produced before 280 B.C. but not long before that date.²⁰

Ephesus presents a problem. Logically its Alexander drachms should be associated with those of the neighboring Ionian mints but they are in fact definitely more worn than the Lysimachus-type drachms from Ephesus.²¹ The latter were minted from ca. 295 when Lysimachus captured the city until ca. 288 when he shifted his base of operations to Macedonia. They may even have stopped sooner since Ephesus was never a major source of currency in Lysimachus' empire. Our Ephesian Alexanders then would seem to belong to the years prior to 295, possibly struck shortly before Ipsus or for a brief interval after 301 preceding the introduction of the regnal strikings of Demetrius Poliorcetes.

Lysimachi and Seleucids

Of the 400 plus Lysimachi of the hoard (including those of Newell's record), practically all are lifetime issues. A tetradrachm of Mytilene (no. 870) which shares an obverse die with one from Clazomenae is clearly later and the same is probably true of the coins from Perinthus and Aenus as well as most of the uncertains for which Newell's tickets suggest attributions. The two pieces of Perinthus at the ANS are in a splendid state of preservation; the one of Aenus and those which may come from Cardia, Nicaea, Odessus and Byzantium are in very good to fine condition. None, however, with the exception of Perinthus, is much better preserved than the last issues of Lysimachus at Amphipolis and Pella. The pattern that emerges is a logical one. With the death of Lysimachus, his major mints closed or curtailed production for a time, causing the Thracian and Euxine cities, where his lifetime issues had circulated widely, to rely upon indigeneous sources of supply.

The Seleucid strikings are all dated by Newell in ESM and WSM to the period prior to 280 B.C.; some, in fact, to the final years of the fourth century. No. 966 of Seleucia Pieria (290–285) is in good condition,



²⁰ M. Thompson, (above, n. 6), pp. 33-49.

²¹ Compare nos. 542-44 (Plate 12) with nos. 883-89 (Plate 22).

no. 967 of Laodicea (295–280) fair to good and no. 968 of Sardes (282–280) very good to fine. Noteworthy, however, is no. 961, a drachm of Seleucia on the Tigris, which Newell dates 282–281. It shows considerable wear and would seem to be of an earlier period.

Date and Place of Burial

Although it would be hazardous to attempt precision with respect to the where and when of the Armenak Hoard's interment, there are suggestive factors involved. In composition the deposit has a distinctly northern orientation with the Amphipolitan issues of Cassander and the Lampsacene tetradrachms of Lysimachus represented in overwhelming proportion. Both were, of course, major currencies and one would expect to find them in substantial quantity in any Asia Minor hoard of the period. Lampsacus, however, was not the only mint that struck Lysimachi in some abundance during the first decades of the third century, but the output of those other mints is scantily represented. It is Lampsacus alone that contributes half of the Lysimachi found in Armenak, suggesting at least that it was the closest source of supply for the region where the hoard was buried. Another indication of a northern orientation is the fact that the few tetradrachms that seem to postdate 280 B.C. are almost all Lysimachi from Thracian and Euxine workshops. Of posthumous Alexanders of that period from the Asia Minor coastal areas, the sole trace consists of a handful of drachms. Finally the inclusion in the hoard of so many barbaric pieces is noteworthy. For some reason or another the normal currency of the region was supplemented by imitations some time near the close of the deposit since most of the barbaric issues are in good condition.

In WSM, p. 186, Newell dates Armenak "about 280 B.C. or not very long afterwards." For the most part its coins were certainly struck before Corupedium but, as has been pointed out, there are a number of exceptions. A few of the Alexander issues from Pella probably belong to the troubled years (279–277) prior to Antigonus Gonatas' accession and establishment of control. The late Alexander drachms of Chios, Magnesia, Priene and Erythrae must have been produced after the death of Lysimachus. Some of that king's coinage is almost surely posthumous. These exceptions are not numerous enough to stretch over any long period of time and furthermore their condition by and large is so similar



to that of the latest pre-Corupedium issues as to attest a rough contemporaneity.

The decade which followed the deaths of Lysimachus and Seleucus was one of unrest and uncertainty. The Seleucids would eventually establish control but not until after the victory of Antiochus I over the Gauls at Thyateira in 275 B.C. Even then it would be some years before Seleucid mints were in full operation in much of Asia Minor. To meet a need for currency during this interregnum, some of the Anatolian cities issued a coinage which had no political overtones, namely the tetradrachms and drachms of Alexander type. The late small change of the Ionian mints represented in Armenak is evidence of this diplomatic approach.

Meanwhile the situation had been further complicated by an alien factor, the Galatian tribes. In 278 B.C. Nicomedes of Bithynia brought 20,000 of these warriors into Asia; a few years later Mithridates of Pontus, to bolster his struggle against Antiochus I, settled large numbers in northern Phrygia. Normal trade patterns were interrupted with the result that the region was for the most part dependent on its own resources for sorely needed currency. There had, however, been no functioning mint in that section of Asia Minor under Antigonus and Lysimachus; skilled workmen were not available. Hence the inept copies of earlier coins, put into circulation and eventually buried as a part of the Armenak Hoard. It seems highly probable that the deposit reflects the chaotic situation in or near Phrygia ensuing from the Galatian infiltrations and that it was interred at some time between 275 and 270 B.C.

APPENDIX

Armenak Coins Recorded by Newell But Not Purchased

A lexanders

Tetradrachms

Amphipolis

1 as Demanhur 91

1 as Demanhur 254

1 as Demanhur 266



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1 as Demanhur 317
1 as Demanhur 373
2 as Demanhur 422
1 as Demanhur 514
1 as Demanhur 716
3 as Demanhur 792
2 as Demanhur 909
8 as Demanhur 1344
1 as Demanhur 1512
5 as catalogue 7
1 with axe to l. and P below
3 with wreath to l. and P below
1 with \Lambda and bucranium to l. and H below
1 as catalogue 19-20
1 as catalogue 21
1 as catalogue 27
1 as catalogue 34
6 as catalogue 39
3 as catalogue 49
2 as catalogue 60
1 as catalogue 64
2 as catalogue 73
1 as catalogue 75
1 as catalogue 83
1 as catalogue 85
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Pella

1 as Demanhur 16381 with Boeotian shield to l. and serpent below. Cf. Philippe 523-31

Corinth

1 as Noe 31

Sardes

1 as T. 368-69 1 as T. 379 1 as catalogue 114 1 as T. 391



Miletus

1 as T. 181

1 as catalogue 116

1 with M to l.

Side

4 as Demanhur 1819

2 as Demanhur 1925

Tarsus

1 as Demanhur 2265 and Tarsos 29

1 as Demanhur 2388 and Tarsos 49

Amathus

1 as Demanhur 2684 or 2711

Citium

5 as Demanhur 2546 or 2619

Salamis

1 as NC (above, n. 13), 17

1 as NC (above, n. 13), 24

Myriandrus

1 as Demanhur 2721

1 as catalogue 119

Aradus

1 as Demanhur 3334

1 as Demanhur 3427

1 as catalogue 120

1 as *WSM*, pl. 43, A (Philip)

1 as WSM, pl. 43, B (Philip)

Byblus

5 as catalogue 128

Sidon

1 as Ake 60 (Sidon)



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Tyre
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2 as *Tyrus* 14 1 as *Tyrus* 21

Ake

1 as Ake 14

1 as Ake 24

2 as Ake 33

1 as Ake 34

1 as Ake 40

1 as Ake 41

1 as Ake 44

1 as Ake 51

Babylon

1 as Demanhur 4224

1 as Demanhur 4263

1 as Demanhur 4331

1 as Demanhur 4402

1 as Demanhur 4410

1 as Demanhur 4432

1 as Demanhur 4446

4 as Demanhur 4479

2 as Demanhur 4526

1 as Demanhur 4595

2 as catalogue 134

3 with ⊗ and ⋒ to l. and ⋒ below

5 with Helios head to l. and KY below

3 as catalogue 135

1 as catalogue 135 but with M below

1 as catalogue 135 but with A below

3 as catalogue 135 but positions of letter and monogram reversed

7 as catalogue 136

2 as catalogue 138

1 as catalogue 140 but with MI and grain to l.

1 as catalogue 144

1 with ⋈ to 1., and B∧ below



A lexandria

1 as Demanhur 4781

Uncertain

- 1 without markings
- 1 with Φ l below
- 2 with wolf's head to l.
- 1 with M to l. and Φ below
- 1 with Δ l in wreath to l. and K | below²²
- 2 with to l. and A or A below22
- 1 with anchor and A to I. and M below²⁸
- 2 with ΛA below (Philip)

Barbaric

1 with $Y \wedge to l$. and $Y \wedge below$

1 with ₱ to l. and H below (imitating Babylon?)

1 with anchor and **?** to l. and M below (imitating Aradus or nearby mint?)

Drachms

Sardes

76 fourth century issues

Lampsacus

136 fourth century issues

Abydus

85 fourth century issues

Teos

11 fourth century issues



²² After Tarsus in Newell's original trays and some tickets are thus labelled but his notebooks suggest he had changed his mind.

²³ Probably the region of Aradus. Cf. WSM, p. 199, 1249.

Colophon

263 fourth century issues

Miletus

62 fourth century and very early third century issues

Magnesia

44 fourth century issues

Mylassa

2 as catalogue 519 5 as catalogue 522

Lysimachi

Tetradrachms

Lysimachia

1 as catalogue 644 1 as catalogue 646

Sestus

1 as catalogue 6611 as catalogue 6624 as catalogue 6641 as catalogue 670

Lampsacus

1 as catalogue 672
2 as catalogue 675
2 as catalogue 680 or 684
1 as catalogue 686
4 as catalogue 690–710
4 as catalogue 711
10 as catalogue 715
12 as catalogue 755
5 as Th. 53



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1 as catalogue 773
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1 as catalogue 774

1 as catalogue 781

1 as catalogue 782

Abydus

2 as catalogue 793

18 as catalogue 787, 795, 798

Sardes

2 as catalogue 806

Magnesia

1 as catalogue 825-27

1 as catalogue 836

1 as catalogue 840-41

2 as catalogue 842

1 as catalogue 844

10 as catalogue 853-62

Colophon

1 as catalogue 865

Mytilene

1 as catalogue 868–69

Alexandria Troas

1 as catalogue 871

1 as Th. 151

1 as catalogue 874

Ephesus

1 as catalogue 877

1 as catalogue 882

2 as catalogue 883 (drachms)

1 as Th. 171 (drachm)

1 as catalogue 886 (drachm)

1 as catalogue 888 (drachm)



Heraclea

3 as catalogue 890 1 as catalogue 896

Cius

1 as catalogue 900

Amphipolis

1 as catalogue 9111 as Th. 1963 as catalogue 915

Smyrna

6 as catalogue 928

Pella

1 as catalogue 9311 as catalogue 940

Perinthus

2 as catalogue 945-46

Aenus

1 as catalogue 947

Uncertain

1 as catalogue 9501 with cornucopiae l. and ∧ on throne1 with ♠ to l. (drachm)

Seleucus I

Tetradrachm

Seleucia on the Tigris

1 as catalogue 957



SUMMARY

	ANS	ETN Record	Total
Alexander Tetradrachms			
Amphipolis	94	54	148
Pella	4	2	6
Paeonia	4	_	4
Corinth	9	1	10
Lampsacus	2	_	2
Sardes	2	4	6
Miletus	1	3	4
Side	_	6	6
Tarsus	_	2	2
Amathus	_	1	1
Citium	_	-5	5
Salamis	2	2	4
Myriandrus	1	2	3
Aradus	6	5	11
Marathus	2		2
Byblus	2	5	7
Sidon	_	1	1
Tyre	3	3	6
Ake	1	9	10
Babylon	12	44	56
Alexandria	-	1	1
Uncertain	15	11	26
Barbaric	1	3	4
Alexander Drachms			
Sardes	56	76	132
Lampsacus	61	136	197
Abydus	53	85	138
Teos	20	11	31
Colophon	98	263	361
Miletus	28	62	90
Magnesia	60	44	104



	ANS	ETN Record	Total
Priene	2	_	2
Erythrae	2	_	2
Ephesus	3	-	3
Chios	1	_	1
Mylasa	22	7	29
Side	5	_	5
Salamis	3	-	3
Aradus	1	_	1
Babylon	1	-	1
Carrhae	1	_	1
Cardia?	2	-	2
Uncertain	42		42
Barbaric	18	_	18
Lysimachus Tetradrachm	ıs		
Lysimachia	9	2	11
Sestus	17	7	24
Lampsacus	115	45	160
Abydus	16	20	36
Sardes	22	2	24
Magnesia	39	16	55
Colophon	2	1	3
Mytilene	3	1	4
Alexandria Troas	6	3	9
Ephesus	6	2	8
Heraclea	7	4	11
Cius	4	1	5
Amphipolis	21	5	26
Pergamum	6	_	6
Smyrna	1	6	7
Pella	16	2	18
Perinthus	2	2	4
Aenus	1	1	2
Uncertain	8	2	10



	ANS	ETN Record	Total
Lysimachus Drachms			
Lysimachia	2	_	2
Sestus	3	_	3
Magnesia	1	_	1
Mytilene	1	_	1
Ephesus	7	5	12
Uncertain	1	1	2
Seleucid Tetradrachms			
Seleucia on Tigris	4	1	5
Ecbatana	2		2
Carrhae	1	_	1
Seleucia Pieria	1	-	1
Sardes	1	_	1
Selencid Drachms			
Seleucia on Tigris	1		1
Ecbatana	1	_	1
Laodicea ad Mare	1	-	1
	Totals		
Alexander Tetradrachms	161	164	325
Alexander Drachms	479	684	1163
Lysimachus Tetradrachms	301	122	423
Lysimachus Drachms ²⁴	15	6	21
Seleucid Tetradrachms	9	1	10
Seleucid Drachms	3	-	3
	968	977	1945

²⁴ As mentioned above (n. 4) some drachms with the badge of Lysimachus have been included in the count of Alexanders. The numbers involved are so small that the overall picture is not materially affected.



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THE ELEPHANTS OF NISIBIS

(Plates 27–29)

ARTHUR HOUGHTON

Among the more impressive coins of the hellenistic rulers are the gold, silver and bronze issues struck by Antiochus III, bearing the king's portrait on their obverse, with the reverse type of a standing or striding elephant. Early in this century, Imhoof-Blumer suggested an attribution of Antioch for a gold stater in Paris with an elephant reverse, and this view was sustained by Newell in his early study of the Seleucid coinages of Antioch in which he included the two known tetradrachms of the same type. In his later, monumental work on the eastern and western Seleucid mints, however, Newell suggested that the Paris stater and all coins of the same type were issued in the east, at Seleucia on the Tigris, Susa, Nisibis and, most prolifically, at the Median capital of

² F. Imhoof-Blumer, "Zur Münzkunde der Seleukiden," NZ 1913, pp. 187-88.



¹ For their help in providing information and material important to the preparation of this article, I wish to thank A. al-Aaji, P. Girardi, S. Hurter, H. Lanz, E. Levante, H. Kuthmann, H. Nicolet-Pierre, B. Overbeck, M. J. Price, H.-D. Schultz, A. Spaer, and N. Waggoner. Abbreviations in this article are in accordance with those given in the author's *Coins of the Seleucid Empire*, ACNAC 4 (New York, 1983), hereafter cited as *CSE*. PG references in the catalogue are to an anonymous listing.

³ E. T. Newell, "The Seleucid Mint of Antioch," American Journal of Numismatics 51 (New York, 1917–18), p. 8, nos. 16 (stater) and 17–18 (tetradrachms). A second stater of similar type, whose dies were the product of the same hand, with reverse monograms \bigstar beneath the elephant and \forall to r., \uparrow 8.54, is in Paris (Seyrig coll.). Both coins belong to a period earlier than that discussed here.

Ecbatana. Until recently there has been no strong reason to review the origin of Antiochus III's elephant type coins, and the occasional tetradrachms and many drachms of the group which appear on the market and in published collections are universally catalogued according to Newell's attributions.

Since the publication of ESM and WSM, however, new material has appeared which indicates the need for a revision of view regarding the mint of most, if not all, such issues. The following catalogue lists the largest series of related coins of the type. On the plates brackets above the numbers indicate obverse die links.

CATALOGUE

Obv. Diademed head of Antiochus III r.; fillet border.

Rev. $BA\Sigma I \Lambda E\Omega\Sigma$ ANTIOXOY Elephant striding r.

Group 1: Rev. to l., M; to r., A (possibly P).

Tetradrachms

1. A1-P1	† 14.85	SNGCopSyria 143; Hamburger, June 1930. ESM 628α. Broken.
2. A1-P1	† 16.98	London. ESM 628β.
3. A1-P1	† 16.86	CSE 1184. From southwestern Asia Minor (Psidia).
*4. A1-P1	† 16.79	New York, ANS. Gans Sale 16, 19 Apr. 1960, 402.
*5. A2-P2	16.90	Obv. border is dotted; rev. l. monogram, M. Numismatic Art and Ancient Coins 4, 17 Apr. 1986, 243. From Asia Minor (said to come from Mardin).

⁴ Seleucia on the Tigris: ESM 252-53; Susa: ESM 397 (the stater, above, n. 3); Nisibis: WSM 852-53; Ecbatana: ESM 626-31 (elephant only), 632-37 (elephant with mahout), 648-51 (elephant only), 652-56 (elephant with mahout, "not certainly of Ectabana"). On the basis of style and technique of production, Newell attributed to Antioch several bronze issues with obv. head of Apollo, rev. elephant surmounted by a mahout (WSM 1107) or an elephant alone (WSM 1109-15).



Group 2: Rev. to l., Π (= Π ?); to r., monogram off flan.

Tetradrachm

*6. A1-P3 † 16.71 Berlin (Fox coll.). Ivanoff, July 1863, 636. *ESM* 629.

Group 3: Rev. to l., \mathfrak{M} ; to r., \mathfrak{M} .

Tetradrachm

- *7. A1-P4 \(\) 16.90 Paris. ESM 630. From north-central Asia Minor (Amasia).
- Group 4: Obv. dotted border. Rev. to 1., elephant's feet, small inverted anchor; below Υ ; to r., \sqcap (possibly \sqcap partially off flan).

Tetradrachms

- 9. A2-P5 † 17.10 M. Comstock and C. Vermeule, *Greek Coins* 1950 to 1963 (Boston, 1964), 272a.
- 10. A2-P5 ↑ 15.96 Rev. r. monogram, Π (die retouched).
 Jerusalem, A. Spaer coll., Sternberg 13,
 17 Nov. 1983, 248. From western Asia Minor (said to come from Dinar).
- *11. A2-P6 † 16.25 Private U.S. coll. From western Asia Minor (said to come from Dinar).
- 12. A2-P6 \ 16.55 From Larissa (Thessaly), Greece. *IGCH* 237.
- 13. A2-P6 † 16.59 Lanz 28, 7 May 1984, 312. From Asia Minor.

Rev. to 1., inverted anchor; beneath elephant's belly, ✓, N or M (nos. 14-15); M (nos. 16-17).

Æ Quadruples

*14. ESM 648; CSE 1189-90, where the form of the monogram is \square .



15. *ESM* 649.

16. *ESM* 650.

Æ Units

*17. *ESM* 651; *CSE* 1191.

Group 5: Rev. to 1., 31.

Tetradrachm

*18. A3-P7 † 17.04 Obv. overstruck on A2. Berlin. ESM 626. From western Asia Minor (Smyrna).

Group 6: Rev. to 1., 31; to r., M.

Tetradrachms

Minor (Psidia).

*20. A3-P8 European Market, 1983. From south-

eastern Asia Minor (said to come from

Adana).

Group 7: Rev. to l., #; to r., IE.

Tetradrachms

21. A3-P1a † 16.69 Munich. ESM 627α.

*22. A3-P1a ↑ 17.24 BM. ESM 627β.

Drachms

Obv. no border; die a1. Rev. to r., \(\mathbf{H}\) or \(\mathbf{M}\). Type A: elephant has small body, sinuous trunk; inscription is generally small.

*23. a1-p1 \uparrow 4.07 ANS. *ESM* 631 k.

24. a1-p1 † 4.10 Hess-Leu, 12 Apr. 1962, 348. SNGLockett 3119.

25. a1-p1 \(\frac{1}{4}\) 4.01 Kastner 10, 18 May 1976, 96.

26. a1-p2 3.94 Kastner 12, 30 Nov. 1976, 141.

27. a1-p2 4.08 Naville 10, 1005. ESM 631y.

28. a1-p3 † 4.00 Kastner 6, 26 Nov. 1974, 178.



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29.
      a1-p3
                    4.09
                           MFA 2160.
 30.
      a1-p4
                    3.78 Myers 12, 4 Dec. 1975, 241; Pozzi 2957.
                           ESM 631a.
31.
      a1-p5
                    3.76
                           Naville 10, 1007. ESM 631δ.
32.
      a1-p6
                           PG photo 93, 16. From northern Syria
                           (Maaret en-Nu'man hoard).
33.
      a1-p7
                    4.12
                           SNGFitz 5590.
34.
      a1-p7
                    3.92
                           Lanz 16, 23 Apr. 1979, 190.
                           Münz. u. Med. FPL 266, July 1966, 8.
35.
      a1-p8
                    3.86
36.
                    4.07
                           BMC Seleucids, p. 30, 31.
      a1-p8
37.
      a1-p8
                    3.93
                           Munich.
38.
      a1-p9
                    3.87
                           Sotheby Parke-Bernet, 16 July 1981, 51.
                           G. Hirsch 123, 20 Jan. 1981, 2092.
39.
                    3.54
      a1-p10
                           Munich.
40.
      a1-p10
                    3.81
*41.
                    3.79
                           Monetarium FPL 33, Winter 1980/81, 42.
      a1a-p10
                           Obv. die extensively recut.
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Rev. Type B: elephant has larger body; end of trunk curves inward; inscription is small or large.

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42.
      a1-p11
                    4.12
                           BMC Seleucids, p. 30, 32.
*43.
      a1-p11
                    3.96
                           Münz. u. Med. 41, 18 June 1970, 286; Leu-
                           Münz. u. Med., 3 Dec. 1965 (Niggeler), 463.
44.
      a1-p11
                    3.77
                           W. Wahler coll., Palo Alto.
45.
      a1-p12
                    3.99
                           ANS. ESM 6311.
46.
      a1-p12
                           McLean 3, p. 330, 4273 (pl. 337, 9).
                    4.13
47.
                    3.99
      a1-p12
                           Auctiones 4, 26 Nov. 1974, 169.
48.
      a1-p12
                           PG photo 93, 15. From northern Syria
                           (Maaret en-Nu'man hoard).
49.
      a1-p12
                    4.00
                           Münz. u. Med. FPL 473, Jan. 1985, 18.
50.
      a1-p13
                    3.84
                           Lanz, 7 May 1984, 313.
51.
      a1-p13
                    3.59
                           Spink and Sons, July 1984.
52.
      a1-p14
                    3.60
                           SNGBerry 1357.
53.
      a1-p14
                    4.16
                           SNGFitz 5592.
54.
      a1-p14
                           Sotheby's, 30 Apr. 1958 (Haughton), 176.
                           PG photo 102, 14. From northern Syria
55.
      a1-p14
```

(Maaret en-Nu'man hoard).



56.	a1-p15	1	3.51	Sotheby's, 4 Apr. 1973 (Ward), 668. <i>ESM</i> 631λ.
57.	a1-p16			PG photo 92, 10. From northern Syria (Maaret en-Nu'man hoard).
58.	a1-p17			PG photo 93, 14. From northern Syria (Maaret en-Nu'man Hoard).
59 .	a1-p18	1	3.89	Munich.
60 .	a1-p18		3.94	Bonham's 2, 23 Sept. 1980, 107.
61.	a1-p19	↑	4.13	SNGFitz 5591.
62 .	a1-p20		3.85	Rauch (Vienna), 21 May 1984, 180.
63.	a1-p21			Hesperia Art FPL, Jan. 1969, 44.

Rev. Type C: elephant has large body; trunk curves upward: inscription is small or large.

- 64. a1-p22 **↑** 4.14 SNGCopSyria 144. **65**. 4.06 a1-p22NFA 7, 6 Dec. 1979, 266. 66. a1 - p224.10 NFA 8, 6 June 1980, 336. **67**. a1-p22 PG photo 93, 17. From northern Syria (Maaret en-Nu'man hoard). *****68. a1-p234.05 Hess 253, 8 Mar. 1983, 259; Naville 15, 2 July 1930, 1071. ESM 631. **69**. a1-p24 PG photo 92, 9. From northern Syria (Maaret en-Nu'man hoard). 70. a1 - p25
 - Rev. Type D: elephant has small body; trunk is straight down between tusks; monogram appears to be M.

CSE 1186. From Beirut.

Lanz 30, 26 Nov. 1984, 343.

- 72. a1-p27 3.01 W. Wahler coll., Palo Alto.
- *****73. a1-p27 1 3.84 CSE 1188 (monogram recorded as A). From Beirut.
- 74. a1-p27 3.79 Private U.S. coll.

3.62

3.88

Rev. Type E: elephant has small body; trunk curves inward. No monogram.

75. a1-p28 3.88 Jameson 1689. WSM 853 $\beta = ESM$ 631v.



71.

a1-p26

Obv. die a2. Rev. Type F: elephant has large body; trunk curves upward; large inscription.

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*76. a2-p21 † 3.79 ANS. ESM 631\pi.
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79. a2-p29 † 3.90 *CSE* 1185.

Rev. Type G: elephant has large body; end of trunk curves inward; inscription is large or small.

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81. a2-p30 3.92 McLean 3, p. 330, 9274 (pl. 337, 10).
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82.
$$a2-p31$$
 4.15 Babelon 395. $ESM 631\pi$.

Obv. and Rev. dies unknown.

89. 4.12 *CH* 5, 41. From Ionia.

92. 4.09 *CH* 5, 41. From Ionia.

Group 8: Rev. to r., below elephant's trunk, $E\Sigma$.

Tetradrachm

*93. A4-P9 ↑ 13.69 Private U.S. coll.

Rev. E Σ to r. (94-95) or below (96-98).

Drachms

94.	a1-p32	1	4.06	Munich.
* 95.	a3-p33			Münz. u. Med. FPL 276 (1967), 8.
* 96.	a3-p34	7	3.73	ANS. WSM 852 α .
97.	a3-p34		4.15	A. Fabretti, Regio museo di Torino: Monete
				Greche (Turin, 1883), 4599. WSM 852 β .

98. a3-p34. Kricheldorf, 12 Oct. 1978, 137.



Group 9: Rev. to l., AP; below, K.

Tetradrachm

*99. A5-P10 ↑ 16.91 *CSE* 903; Leu 22, 8 May 1979, 1962. From Asia Minor.

Group 10: Rev. to l., Œ; to r., K.

Tetradrachms

*100. A6-P11 ↑ 16.70 Seyrig, Trésors 8.143 (IGCH 1413). From western central Asia Minor (Ayaz-In).

101. A6-P11 ↑ 16.82 P. Naster, La collection Lucien de Hirsch (Brussels, 1959), 1662. WSM 868β.

*102. A6-P12 \uparrow 16.32 ANS. Naville 10, 15 June 1925, 1003. $WSM~868\alpha = ESM~765$.

Ungrouped Drachms

Rev. above, ₱ ; below, ₺.

103. a4-p35 † 4.02 SNGCopSyria 145; WSM, p. 31, 631Aa.

*104. a4-p35 \(\gamma \) 4.06 \(CSE \) 1187.

105. a4-p35 4.17 Lanz 30, 26 Nov. 1984, 344.

106. a4-p36 4.18 Brussels. WSM, p. 31, 631Aβ.

Rev. elephant stands l.; to l., Ψ ; to r., \bowtie (\bowtie ?).

Rev. no monogram.

108. a6-p33 † 4.25 *BMC*, p. 26, 30. *WSM* 853α.

109. a6-p33 4.23 Naville 10, 15 Jun. 1925, 1004. WSM 853γ.

110. ?-? 4.21 CH 5, 41. From Ionia. Seen in trade.

Barbaric Issue

Rev. no monogram.

*111. A7-P34 Kricheldorf 28, 18 Jun. 1974, 138.



Plated Drachms

*112. \uparrow 2.94 ANS.

Rev. monogram, if any, off flan.

*113. \leftarrow 3.02 ANS.

INTERNAL RELATIONSHIP AND CHRONOLOGY

A. Tetradrachms

With the exception of the ungrouped drachms and the tetradrachms of Groups 9-10, which are associated with the earlier groups only by type, the coins of the series can be related to each other by die or monogram linkages, style, or association with other issues evidently produced in the same mint. Groups 1-3 are linked by obverse die; 4 is related to Group 1 by the monogram PP, which also appears on the reverse of an Apollo drachm from the same mint (below, n. 15; Plate 27, A). The overstriking of no. 18 unifies Groups 5-7 with 1 and 4 (die A2). Groups 7 and 8 are linked by a drachm, no. 94, struck from an obverse die used extensively on the earlier series but whose reverse carries the monogram $E\Sigma$ of the later one. Moreover, the single known tetradrachm of 8 was the product of the same hand as Apollo reverse issues of Antiochus which are connected with the preceding groups. Groups 9 and 10 (99-102) may have been issued at another location, but this seems unlikely: they cannot be placed within the production of any other mint, and the Asia Minor provenances of 99 and 100 support the probability that they were from the same mint as the other elephant reverse issues in the catalogue.

The internal chronology of the tetradrachms of the series is less certain. From the overstriking of coin 18 and the reuse on coins 21 and 22 of die P1, it is clear that Groups 5 to 7 followed Groups 1 to 3 and 4. That A1 (Groups 1-3) rather than A2 (Group 4) was the first die of the series, however, is based primarily on the hypothesis that the fillet border convention was used once and was then succeeded by obverses with dotted borders, but this arrangement is also supported by the fact that



the obverse die of coin 5 is the least worn of those issues struck from A2.5

The series is not unified by style. Despite certain similarities between A1 and A2 (depth of relief, for example, and profile), the engraver's approach to the royal portrait was different in each case, and the specific details of ear, hair, diadem and border are quite disparate. Moreover, the carefully modeled forward-striding elephants of P1, P3, and P4 become static and hunchbacked in P2, P5, and P6. The evidence points to the involvement of two engravers, one who cut A1 and its associated reverses (P1, P3, and P4), the other A2 (along with P2, P5, and P6). New engravers were evidently employed to execute the dies of the later groups: one for 5 to 7, another for 8, yet another individual for 9 and 10.

B. Drachms

The elephant reverse drachms with the monogram \forall (or \Rightarrow) have been put with Group 7 principally on the basis of obverse style. While they could have been struck as early as the tetradrachms of Group 1, which have the same monogram, the pinched and narrow features of the king on a1 and a2 appear to be the product of engravers within the influence of (but not identified with) the master artist of A3. The general sequence of obverse dies is indicated by the fact that the youthful portrait of a1 was replaced by one more consistent with his true age and with the tetradrachm obverses, which show a canonical later image of the king with sharp features, receding hair and a single lock falling forward on the brow. The drachms with a1 and a2 obverses are linked twice by reverse dies p21 (63 with 76 to 78) and p26 (71 with 86 and 87), but the condition of their reverses indicates that they were used first with a2, which was cut and put into service before the lifetime of a1 was over.



⁵ However, see C. Boehringer, Zur Chronologie Mithellenistischer Münzserien 220–160 v. Chr., AMUGS 5 (Berlin, 1972), p. 94, whose preferred order, following Newell but including the then newly recorded coins 8 and 9, is A3-A2-A1.

The Group 7 drachms are remarkable because they form the most extensive known coin issue of any Seleucid king. The 68 listed coins comprise the bulk of those published or catalogued, but others certainly exist to be added to the known material. Moreover, obverse die a1 was used in combination with at least 28 reverse dies in this group and a twenty-ninth (p32) in Group 8, an unparalleled number for any drachm series of the hellenistic period.⁶

The ungrouped drachms cannot be placed within the tetradrachm series and, while their reverse style and epigraphy is close to the particle drachms, they are not related by obverse die or monogram to any other group. No. 107 is totally anomalous: its style, leftward-facing elephant and monograms place it outside of the regular production of Nisibis. In the absence of strong countervailing reasons, it seems best to leave it within the current series.

- ⁶ Nancy Waggoner reports that in her study of the Alexander mint of Babylon, she has recorded several instances of high reverse/obverse die ratios, including one case of 21 reverses for a single obverse die. M. Thompson, *The New Style Silver Coinage of Athens*, ANSNS 10 (New York, 1961), records ratios of 13:1 for drachms (p. 70, no. 149), and up to 17:1 for tetradrachms (p. 182, no. 465) struck at Athens in the second quarter of the second century B.C.
- 7 The elephant left is found elsewhere only on a unique tetradrachm of Antiochus struck at Seleucia on the Tigris (ESM 252) and on smaller bronzes of Antioch (WSM 1112-15). The ψ in the rev. left field of drachm 88 may be an abbreviated version of Y, which had been in frequent use at Antioch since the reign of Seleucus II, and which appears on Apollo-reverse tetradrachms of Antiochus III almost certainly struck at Nisibis; see WSM 1088, "Antioch," reattributed by G. Le Rider, Suse sur les Séleucides et les Parthes (Paris, 1965), p. 25, n. 7, hereafter cited as Suse; also N. Olcay and H. Seyrig, Le trésor de Mektepini en Phrygie, Trésors monétaires Séleucides 1 (Paris, 1965), 636. The same monogram also appears on silver and gold coinage attributed by Newell to Susa (ESM 397-400; ESM 403), reassigned by Le Rider to Nisibis (Suse, p. 25, n. 7: see below, n. 13). Newell, ESM, pp. 146-47, explained the appearance of Y first at Antioch, then in the east, then again at Antioch, as the result of a transfer from Antioch to Susa of a mint official who later returned to the Seleucid capital, but who also "seems to have presided temporarily at another mint (in northern Mesopotamia)." I am inclined to accept Le Rider's reattribution of ESM 392-404 to Nisibis. The series would have been issued earlier in the king's career, when his portrait continued to show short hair falling directly over the brow.



Plated Drachms

Two plated drachms of the series are known. While officially sanctioned plated issues were struck at other hellenistic mints for unclear reasons,⁸ the appearance of 112 and 113 is quite crude and suggests the work of ancient forgers.

Bronze Issues of Group 4

Newell attributed several bronze issues with elephant reverses to Ecbatana. A number of these, with the reverse type of an elephant ridden by a mahout and with a tripod in the left field (ESM 632-37), can be left at Ecbatana: their characteristic monogram \mathbb{R} relates them closely to earlier and later bronze and silver issues certainly attributable to this mint (ESM 614-25; ESM 638). ESM 648-51, however, are typologically identical with the series listed above and should be included with its silver. They are stylistically close to a number of tetradrachms of the silver series. In addition, the monogram \square (or \square), carried by ESM 648-49, may be a variant of the \square of Groups 1 and 4. Finally, the small inverted anchor in their left field is a characteristic symbol only of the Group 5 tetradrachms, with which they have been catalogued.

Issuing Mint

The evidence seems compelling that Nisibis, instead of Ecbatana, was the issuing mint for the elephant reverse coins of this series. Several factors support this conclusion.

First, the elephant reverse coins have no apparent connection with Antiochus' issues of Ecbatana. Newell believed that obverse die A3

- ⁸ A. Houghton, "Notes on the Early Seleucid Victory Coinage of 'Persepolis'," SNR 1980, p. 4. Other plated eastern issues of the hellenistic period, possibly officially sanctioned, occasionally appear in public and private collections.
- ⁹ The motif of an elephant with a mahout is reflected again on bronze issues of Antiochus IV with the monogram \mathbb{X} or \mathbb{H} assigned by Le Rider to Ecbatana (Suse, p. 331, 4). Le Rider's attribution is persuasive and finds some support in that the second coin of this bronze group (CSE 1227) is of known provenance and was acquired in Tehran.



(which he assumed was the first of the series) was a direct continuation of Ecbatana issues of the seated Apollo type, 10 but the style and technique of manufacture (broad flans and high relief of the elephant types, as opposed to smaller flans with varying relief of the seated Apollo coins) is quite different in each case, particularly so if one compares the issues of Newell's Series III of Ecbatana with the first die(s) of the elephant type series. 11

In addition, there is no monogram relationship between the Apolloreverse issues of Ecbatana and the elephant-reverse series, with the exception of WSM 631A (103 to 106 in the catalogue). Newell believed their characteristic monogram £ identified these coins with Ecbatana¹² but, as he noted, its appearance on the issues of this mint ceased during the reign of Seleucus II, some 35 or 40 years earlier, after having been in more or less constant use since at least the beginning of the third century. Reasonably, £ cannot represent the same mint official as the one who worked at Ecbatana and must therefore be the monogram of another individual who, given the evidence, probably was associated with Nisibis.

If no relationships exist between the elephant reverse series and the Ecbatana Apollo types, a number do occur between the former and Apollo type issues attributed by Newell to Nisibis.¹⁴ These monograms

Reattributions to Nisibis

WSM 875-77, reattributed by O. Mørkholm, "A Greek Coin Hoard from Susania," ActaA 36 (1965), p. 130, n. 5, to another, uncertain western mint. However, the assignment of this coin to Nisibis is retained by Seyrig, Trésors du Levant, anciens et nouveaux, Trésors monétaires Séleucides 2 (Paris, 1973), 8, 145.

ESM 392-404 ("Susa") suggested as issues of Nisibis by Le Rider, Suse, p. 25, n. 7 (see above, n. 7).

WSM 1088 ("Antioch"), reattributed to Nisibis by Le Rider, Suse, p. 25, n. 7. Newell, WSM, p. 150, noted the relationship of the portrait to issues of Nisibis.



¹⁰ ESM, p. 221.

¹¹ Compare in particular ESM, pl. 45, 1-2, with Groups 1 to 3 and 4.

¹² WSM, p. 31.

¹³ The first issue with this monogram, ESM 429, struck in Alexander's name, is dated by Newell to ca. 311-303 B.C. More recent studies suggest that the Seleucia mint did not open until perhaps 300 B.C. or later: see CSE, p. 94, n. 1.

¹⁴ Newell's attribution to Nisibis of WSM 831-77 has been generally sustained by most modern scholars. The following exceptions should be noted:

are listed according to groups unified by die links or shared symbols in the following table.

TABLE

Elephant Reverse Issues			Apollo Reverse Issues		
Group	Monogram(s)		Monogram	Reference	
1–3	144	PP	FÎ	A. Hess 254, 25 Oct.	
	141	M		1983, 223	
4	¥	PP	†	WSM 831-33; 835-	
				36 (836 is ¥)	
5-7	31	(IE)	•	CSE 902	
	M	14			
8	ΕΣ		ΕΣ	WSM 849-51	
9–10	AP	K	R	WSM 861–66	
	Œ			(864 is AP)	

Only $\[Percolor{}^{PP}\]$ and $\[ED]$ have exact parallels among the Apollo reverse coins of Nisibis, 15 but the approximate affinity of several of the others ($\[Percolor{}^{PP}\]$ with $\[Percolor{}^{PP}\]$) tends to support the relationship between the two series and, therefore, the assignment of the elephant-reverse coins

WSM 1453 ("Sardes"), reattributed to Nisibis by Seyrig, Trésors, 8, 150.
WSM 1679 ("Uncertain Western Mint"), tentatively reattributed to Nisibis by Seyrig, Trésors 8, 146-49.

New Attributions to Nisibis

Seyrig, Trésors 8, 136-42.

CSE 900-902.

CSE 1197, tentatively assigned to Ecbatana, but whose obverse was certainly the product of the engraver of A2 of the elephant-reverse series.

¹⁵ Until 1983, no Apollo reverse issue with the monogram \mathbb{P} had appeared. The Hess coin noted above, with rev. to l., \mathbb{P}^{7} ; to r., behind Apollo, branch; in r. field griffin's head, \uparrow 4.24 (here, Plate 27, A), was the product of the same hand as WSM 833-35 (see WSM, pl. 9, 1-3).



to this mint. The attribution is strengthened, moreover, by the fact that the obverse portrait of coin 91 was almost unquestionably cut by the same engraver who executed the obverse dies of WSM 841-55 (Newell's dies A1-A6); 859-62 (A8-9); and 863-67 (A11-12). WSM 850 (Newell's A5-P12B) in Copenhagen, is illustrated for comparison (Plate 29, B).

Finally, the evidence of provenance, if not conclusive, at least strongly suggests that the striking of the elephant type coins should be located in this area of Asia Minor and not further to the south or east. This was not apparent when Newell published ESM, 18 but a number of recent hoards have appeared to significantly clarify the record for many coins of the group, and the reported provenances of others have provided additional, sustaining information. From the available data, all the tetradrachms of the series whose provenances are known have come from either Asia Minor (11 coins from scattered locations) or northern Greece (one coin from Sitichoro, Thessaly). The provenances of the drachms, which appear to have circulated more widely, include Syria, Lebanon and Turkey. 19

While the known provenances of Antiochus' elephant type issues do not totally preclude their having been produced at an eastern mint such as Ecbatana, the likelihood is greater that they were struck further to the west, at a mint whose normal area of circulation included the area of Asia Minor, Mesopotamia and Syria.



¹⁶ The relationship of ★ of the "Ecbatana" elephant-reverse issues with ★ of the Nisibine Apollo types has been noted by Boehringer, *Chronologie* (above, n. 5), p. 94.

17 See WSM, pp. 71-72 and pl. 9, 9-12; pl. 10, 1-9, 13-14; pl. 11, 1-2 and 12; pl. 12, 1-4.

¹⁸ Newell, ESM, p. 222, n. 54, records the Paris coin (catalogue no. 7) as coming from Amasia in northern Asia Minor but, in the text, states that the drachms "as a rule come from Persia."

¹⁹ Not listed by die are the ESM 631 type (Group 7) drachm found in northwestern Syria (IGCH 1552), and five others, four of the ESM 631 variety and one WSM 853 type (without monogram, ungrouped) reported to have been found in western Asia Minor ("Ionia") along with seven Ephesian drachms (CH 5, 41). It has not been possible to determine which drachms Newell believed to be of Persian origin (above, n. 18).

ABSOLUTE CHRONOLOGY

The absolute chronology of the elephant coins can be established on the basis of historical and numismatic evidence. A provincial mint is very unlikely to have begun issuing a special coinage such as the elephant series suddenly and on its own initiative. It is probable that Nisibis did so only in connection with, or in commemoration of, an important event, probably at a time when the king himself was present.

The historical record suggests that Antiochus appeared in Nisibis only four times: during his passage to and from Babylonia in 221/20 B.C., when he suppressed Molon's revolt, 20 and on his advance into and return from the areas east of Babylonia, on the occasion of his seven-year anabasis, from ca. 211–204 B.C. The older portrait of the king which appears on the elephant type coins excludes Antiochus' first military expedition against Molon as a likely moment when this series was struck. It seems clear instead that it was issued after his penetration of the eastern reaches of Bactria and India, during his return to Antioch.

Polybius, the only classical source who records Antiochus' campaigns in the east, does not in fact mention Nisibis in connection with the king's anabasis. Yet Nisibis was on the principal route to Media from Antioch (and from Arsamosata in Sophene, where Antiochus beseiged the Armenian king, Xerxes, in 212 B.C.),²¹ and it is almost certain that he



²⁰ Polybius 5.51.1 records Antiochus' passage to the east, but does not mention his stopping points on his return to Syria (Polyb. 5.56.14-5.57.1).

²¹ Polybius 8.23. Coins of Xerxes have been published: A. de la Fuye, "Monnaie inédite de Xerxes, roi d'Arsamosate, provenant des fouilles de Suse," RN 1927, pp. 144-54; see also Le Rider, Suse (above, n. 7), p. 200, 494, who suggests that Babelon, Catalogue des monnaies grecques de la Bibliothèque National, Les Rois de Syrie, d'Arménie et de Commagène (Paris, 1890), p. 212, 6-7, may also belong to this king. On the route from Antioch to the east, Newell comments (WSM, p. 70, n. 78) that it was "the most usual, the most direct, and for a large army the most feasible route from Syria to Ecbatana." Alexander the Great avoided Nisibis during his forced march of 225 miles in 14 days from Carrhae to the Tigris in 330 B.C.: see most recently D. W. Engels, Alexander the Great and the Logistics of the Macedonian Army (Berkeley, 1978), p. 69, with earlier references. The dates of Antiochus' campaigns are according to E. Will, Histoire politique du monde héllenistique, Annales de l'est (Nancy, 1966-67), 2 vols., who generally agrees with E. Bevan, The House of Seleucus, (London, 1902), 2 vols..

passed through that city at the opening of his campaign against the Parthian king, Arsaces II.²² It also seems likely that he returned to the west by way of northern Mesopotamia. Nisibis was a likely stop for him to make, burdened as his military train was by treasure as well as elephants.

While Polybius records that Antiochus had elephants on his expedition, they are mentioned only in connection with the easternmost extension of his travels, when he was in Bactria and India in 206 B.C. According to Polybius, Antiochus left Bactria

... adding to his own the elephants of Euthydemus. Crossing the Caucasus he descended into India and renewed his alliance with Sophagasenus the Indian king. Here he procured more elephants, so that his total force of them amounted now to one hundred and fifty.²³

Given the absence of any prior mention of elephants, however, and Polybius's own description of Antiochus' passage across the desert of Media and the difficulties of his route to Hyrcania early in his campaign,²⁴ it is hard to sustain the view that he had any before he had reached far into Bactria itself. Like Alexander more than a century earlier, Antiochus would likely have avoided the use of elephants in dry country where military sense dictated the need for speed and maneuverability during his rapid advances.²⁵ His return to Syria after the campaign, however, was marked by the war elephants in his retinue, which were recorded on his coins.

- 22 And perhaps in 212 B.C., when he beseiged Xerxes in Armenia. Newell, WSM, p. 70, doubts that Antiochus went down the Euphrates, as Bevan (above, n. 21), 2, p. 17, suggests on the basis of the very fragmentary Polybius 9.43.6.
- ²³ Polybius 11.39.10-12. By inference, Antiochus could not have gone far beyond the Hindu Kush, and Polybius' "India" would here imply the area around the Kabul valley.
 - ²⁴ Polybius 10.28.1; 10.29.3–4; 10.30.1.
- ²⁵ Alexander had no elephants in his train until his approach to the Indus River in 327 B.C., when he appears to have rounded up a number of strays: Arrian, *Anabasis* 17.85.3; Diodorus 17.85.3. Shortly afterward Taxilas promised (and provided?) him with 25 of the beasts (Arrian 4.22.6; Quintus Curtius 8.12.7; Diodorus 17.86.5. 25), and he was confronted with them in battle at the Hydaspes (Arrian 5.9.10; Diodorus 17.87.3).



The relationship between Antiochus' elephant and Apollo type coins of Nisibis, and the likelihood that the former first appeared ca. 204 B.C., 26 forces a general redating of both series. The monogram and stylistic affinities between Groups 1 to 4 and Newell's Series I (WSM 831-36) indicate that both should be given an early date of perhaps ca. 204-200 B.C. Groups 5 to 7, which evidently follow 1 to 4, would have been contemporaneous with Newell's Series II (ESM 837-40), ca. 199-196 B.C. Newell's very long Series III (and Group 7) would therefore have been struck ca. 195 B.C. or slightly later, and would have continued into the final years of Antiochus' reign. 27 Groups 9 and 10 of the elephant coins may have been contemporaneous with the later years of Series III, although the appearance of the tetradrachm no. 100 in the Ayaz-In hoard suggests that it was issued at an earlier date. 28

²⁶ Newell suggests ca. 205 B.C. for essentially the same historical reasons (with a year's difference because of his attribution of the group to Echatana). Boehringer, *Chronologie* (above, n. 5), pp. 80-81, follows Newell's dating, but suggests the duration of the series as only two years instead of Newell's five.

²⁷ The reasons for retaining Newell's Series IV (WSM 875-77) at Nisibis seem to me tenuous, and these coins, which were almost certainly struck earlier in Antiochus' reign, should be assigned to a different mint, possibly also in Mesopotamia. Mørkholm, Susiana (above, n. 14), p. 130, n. 5, notes the stylistic arguments weighing against the attribution of these coins to Nisibis and the divergence of their monograms for the regular and continuous coinage which falls between Newell's Series III and the first issues of Seleucus IV at this mint (O. Mørkholm, "Le monnayage de Séleucus IV à Nisibe," RN 1965, pp. 44-50). In addition, the fillet border of these issues is a convention which appeared first on Antiochus' coinage at the end of the third century (initially at Nisibis with the earliest elephant coins? but see Newell's Antiochene Series III, WSM, p. 145, perhaps dated a bit early, to ca. 208-200 B.C.) and which, while maintained at Antioch, was superseded at Nisibis by dotted border obverses.

²⁸ The appearance of no. 98 in the Ayaz-In hoard (Seyrig, *Trésors* 8; *IGCH* 1413), which had a significant number of FDC examples of Newell's Nisibine Series II coins but none of Series III, suggests that it may have been struck *before* the initiation of Series III.

The chronology suggested here does not run counter to the evidence of the Ayaz-In hoard, although it spreads the likely period of striking of its latest issues (Seyrig, *Trésors* 8, 132–43) across a period of a decade, and suggests a redating of the hoard's terminus ante quem from shortly before 190 B.C. to ca. 195 B.C.



(Plates 30-31) Wayne Moore

Many of the bronze, and perhaps some of the silver, issues of the Seleucid king Demetrius II yet remain enigmatic and difficult to place within the known mint series. In some cases, they have proven to be problematic even as to which of the two reigns of this king they should properly be assigned. The divine couple bronzes present a case in point: they were placed in the second reign by Percy Gardner, followed by

¹ The term "divine couple" as used in this paper has been borrowed from the late great scholar of classical Middle Eastern numismatics, Henri Seyrig. In his article "Trésor monétaire de Nisibe," RN 1955, p. 109, he coined the phrase "un grand couple divin" for the issues here discussed.

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² BMCSeleucids, p. 78, 24-25, hereafter cited as BMCSel.



George MacDonald³ and, perhaps more correctly, placed in the first by E. Babelon,⁴ Von Carl Küthmann⁵ and Otto Mørkholm.⁶ Segregating the issues of this king based upon the presence of the epithet "Philadelphou" during the first reign and the lack of this epithet during the second has been suggested as a point of departure.⁷ While this writer agrees with such a division in general, there seem to be certain exceptions telling against this as an overall criterion of differentiation.⁸

The identification of the divine couple presents a challenge which has been dealt with in little more than a cursory manner by most of the authors who have attempted it. While the female figure is generally

- 3 Hunter 3, p. 89, 23-24.
- ⁴ E. Babelon, Les rois de Syrie, d'Arménie et de Commagène (Paris, 1890), 939-41; hereafter cited as Babelon.
- ⁵ Von Carl Küthmann, "Münzen als Denkmale seleukidscher Geschichte des II. Jahrhunderts vor Chr. fur die Regierungen von Demetrios I. bis Tryphon," *Blätter für Münzfreunde und Münzforschung*, April-May 1954, p. 59, n. 102; hereafter cited as Küthmann.
 - ⁶ SNGCopSyria 279.
- ⁷ E. Bikerman, Institutions des Séleucides (Paris, 1938), p. 221, but with the caveat "Mais la légende variait non seulement suivant le cours du temps, mais aussi selon les ateliers d'émission." See commentary in A. Houghton, Coins of the Seleucid Empire from the Collection of Arthur Houghton, ACNAC 4 (New York, 1983), 567–68 and 1014–19; hereafter cited as CSE.
 - ⁸ Note reservations in CSE following coins 567-68.
- ⁹ Male figure in "Parthian costume" opposite "a City" (goddess), BMCSel, p. 78, 24-25; see Hunter 3, p. 89, 23-24. As Serapis with Tyche, see Küthmann, p. 159, followed by Mørkholm, SNGCopSyria 279. Henri Seyrig in his "Antiquités Syriennes," 89-90, Syria 47 (1970), pp. 86-87, 91-92 and 114-16, approaches the subject in terms of a Semitic cult. He sees the cult as ranging broadly across southern Palestine and Syria, into Babylonia and Susiana, from the middle of the second century B.C. to the second century A.D. Special note should be made of a statue at the museum of Suweida, which he illustrates (p. 92, fig. 11), showing the deity with his polos, cornucopia and patera, and also of the bas-relief from Tang-i-Sarvak in Susiana (pl. 19). The proposed appellatives of the male deity range from "Baalshamin (?)" in the Hauran (p. 92, fig. 11), "Zeus Bêlos?" at Seleucia on the Tigris (pp. 91 and 115), and "Ahuramazda-Bêl?" in Susiana (pp. 91, 114-15 and pl. 19). The general premise of syncretism between local Semitic 'Baals' and the hellenistic Zeus within the Graeco-Oriental cities of western Asia is consistent with shifting political and cultural influences in the area, which for centuries had been contested by east and west. The concept that Semitic elements of these cities revered the deity as their local protective spirit (Seyrig, p. 92) is not inconsistent with my approach. From



taken to be Tyche, the goddess of fortune and protectress of the city, the male figure, as her consort, can be identified somewhat differently than has previously been proposed. His identification, however, remains speculative.

The following catalogue brings together as many examples of this type as possible from known collections. The die axes are \(\tau\) unless otherwise indicated. Illustrated coins are marked by an asterisk.

Obv. Diademed, lightly bearded head of Demetrius II r.

Rev. ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ NIKATOPOΣ Bearded figure wearing long chiton (and tunic?) standing r., holding hand of Tyche, also wearing long chiton (and peplos?), who advances toward him from r.; both wear polos and cradle cornucopia in l. arm.

Æ Doubles

Series 1

Obv. King's portrait is stylized and ranges from beardless to lightly bearded, diadem ends hang straight; border of dots.

- *1. 1 5.76 Paris, Babelon 940 = de Luynes 3361 (beardless).
- *2. 7.35 Berlin, C. R. Fox 1873 (beardless).
- *3. 8.50 Paris, Babelon 941.
- *4. 7.05 Paris, Babelon 939.
- *5. 6.40 ANS.
- 6. 6.77 Hunter 3, p. 89, 24.
- 7. 5.54 CSE 1019, from Damascus (fuller beard).

Series 2

- Obv. Beard extends along jawline, diadem end hangs over neck; fillet border.
- 8. 7.43 SNGCopSyria 279; to 1., E; between figures, Y; to r., H.
- 9. 7.89 Copenhagen; to l., H; above, E; between, Y.
- *10. 8.99 BMCSel., p. 78, 25; between, Γ (?) above Y.
- *11. 8.94 As 9, BMCSel, p. 78, 24.

the point of view of the Greek inhabitants, their local 'Zeus' may represent an equivalent ancestral protective spirit. In this context, the portrayal of a local deity with mixed Greek and oriental attributes would seem natural (Seyrig, p. 86).



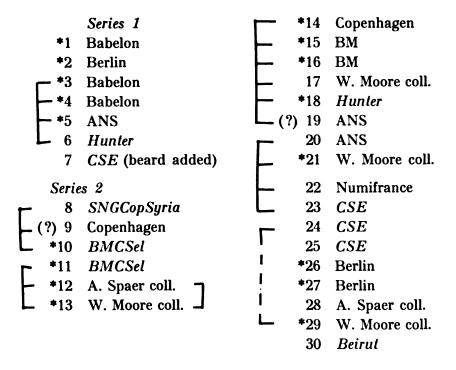
 *12. \ 5.97 As 9, Jerusalem, A. Spaer coll., from a source whelled extensively in Lebanon and Syria. *13. 8.31 W. Moore coll., 1984, same dies as 12. *14. 9.99 As 9, Copenhagen, said to be from the region of Syria. 	eastern
 *13. 8.31 W. Moore coll., 1984, same dies as 12. *14. 9.99 As 9, Copenhagen, said to be from the region of 	
*14. 9.99 As 9, Copenhagen, said to be from the region of	
Syria.	, Y (?).
	, Y (?).
*15. 7.45 As 9, BM 1931-4-6-449.	, Y (?).
*16. 9.84 BM 1931-4-6-450; to l., \(\mathbb{H}\) (?) above; between	-
17. 6.87 As 9, W. Moore coll., 1982.	
*18. \ 7.49 Hunter 3, p. 89, 23; to 1., \ above.	
19. 9.61 As 9, ANS.	
20. 6.45 As 9, ANS	
*21. 7.71 As 9, W. Moore coll., 1980.	
22. ? ? As 9, Numifrance, 2 June 1982, 86; E (?) off	flan.
23. 5.90 As 9, CSE 1016, from Tehran; H lacking.	
24. 11.14 As 9, <i>CSE</i> 1018, from Lebanon or Syria.	
25. \ 7.28 CSE 1017, from Beirut, to l., Γ below; between	n, I.
*26. 8.80 Berlin, Löbbecke 1906; to l., \mathbb{H} above; pellet a to r., O.	bove Y;
*27. 6.75 Berlin, Löbbecke 1906; to l., € (?) below; to r.,	, O.
28. 7 6.70 Jerusalem, A. Spaer coll.; pellet (?) above Y; to r	
*29. 5.61 W. Moore coll., 1983; to l., H; between, pellet ab	-
30. ? Peirut, D. Baramki, The Coins Exhibited in the	
ological Museum of the American University of	
(Beirut, 1968), p. 46, 158—without monogramunillustrated.	

DIES AND FLANS

In Series 1 the obverse die of coin 1 would seem to stand by itself, as perhaps an early pilot issue. Those of 2 and 7 appear to have been cut by the same hand, one beardless, the other bearded. In Series 2, which comprises the bulk of the overall issue, we find no less than five, and probably six, distinct obverse dies produced. Coins 24–29 are stylistically cohesive and distinct from the others, and appear to involve more than one obverse die. The portraits of this issue are to be noted for their unique realism in comparison to the other, relatively uncommon, portrait issues in bronze of Demetrius II during his first reign.



TABLE 1 Die Links



The reverse dies, being in the punch position and breaking down more frequently than the obverse dies in the anvil position, were produced in greater quantities and linkage is rare in the present sample. In only one case (12 and 13) can we establish a definite reverse die link, however, and stylistic characteristics of the reverse dies seem to change sequentially with the obverse die changes. The local cult imagery of the reverse dies (discussed below) may reflect a certain measure of the religious syncretism manifest at the interface of Greek and oriental cultures during these times — particularly if one or more of the die engravers had intended to depict the male figure wearing a tunic over his chiton (see notes 9, 10 and 29).

The flans vary: they are regular under Series 1 but sharply bevelled, without regard to whether the spread side was placed under the punch or on the anvil die, as in Series 2.



MONEYERS

While Series 1 lacks any indication of the responsible moneyers, Series 2 has three distinct officials signing the reverse dies. H, with the variants H, H and H, saw the issue through to the end. His associates E and Y appear with him continuously until we come to the reverse die of 29, where they are replaced by Δ (or Δ). A subordinate, O, appears to have signed some of the later dies. Other subordinates, such as a possible Γ as well as a possible Γ , may only have been die engraver's blunders.

The predominance of H, E, Y and later O (with Δ at the end of the issue) suggest a tightly knit group of moneyers who presided over the rather prolific Series 2 issues. Due to its lack of official signature, 30 remains questionable and may belong with Series 1.

ICONOGRAPHY: AGATHOS DAIMON AND AGATHE TYCHE

The reverse type of these bronze issues portrays the two deities with identical attributes of polos (sometimes described as kalathos or modius) and cornucopia. As an established fertility symbol the cornucopia suggests that our divine couple, who greet each other in harmonious consort, are themselves symbolic of fertility and well-being. Even the dress appears to be similar, with both figures wearing a long chiton. The male figure may also be wearing a tunic, while the female figure may be wearing a peplos over her chiton. What appears to be a tunic and peplos may, however, simply be an archaistic over-fold of the chiton on both figures. The worn condition of the coins and the generally crude die engraving make such a distinction difficult to determine. The poloi suggest that the figures are representative of demotic cult images, perhaps copying actual statues (see above, n. 9).

The male figure, with his polos and cornucopia, has been identified on issues from Seleucia on the Tigris during the reigns of Demetrius I



¹⁰ Babelon (above, n. 4), 939-41, describes the dress of the male figure as a "tunique talaire."

(Plate 31, B),¹¹ Demetrius II (?),¹² Phraates II (Plate 31, D)¹³ and on subsequent autonomous bronzes (Plate 30, A).¹⁴ Closely associated with the Demetrius I bronzes is a contemporary issue depicting the female counterpart of the male figure (Plate 31, C).¹⁵ Both figures share the attributes of polos and cornucopia. Taken together, they were the prototype of the divine couple found on the bronzes of Demetrius II. This iconography appears to have been limited, under the Seleucid kings, exclusively to the coinage of Demetrius I and II.

The female figure from our divine couple, commonly described as Tyche or Tyche-Demeter, was adopted by Demetrius I as his family badge on the tetradrachms of his western mints and at Seleucia on the Tigris.¹⁶ Her cult became particularly prominent at Seleucia as attested by the tetradrachms of his son Demetrius II¹⁷ and subsequent Parthian



¹¹ Bronze 1 4.32, BM 1931-4-6-200. G. K. Jenkins, "Notes on Seleucid Coins," NC 1951, p. 2, n. 7, and G. Le Rider, Suse sous les Séleucides et les Parthes (Paris, 1965), p. 145, hereafter cited as Suse.

¹² The same male figure may exist on a unique, but worn, bronze of Demetrius II from Seleucia, Suse 317.

¹³ Tetradrachm ↑ 16.21, ANS. E. T. Newell, "A Parthian Hoard," NC 1924, pl. 14, 1 (this coin); M. Dayet, "Un tétradrachme Arsacide inédit," Arethuse 1925, pp. 64-65, pl. 15, 4; MFA 2213 and Suse, p. 366, n. 5, pl. 70, 23, 25-27.

¹⁴ Bronze ↑ 2.56, ANS. R. H. McDowell, Coins from Seleucia on the Tigris (Ann Arbor, 1935), 132, "Two City-Goddesses" — the figure on the left has been identified as a bearded male by Seyrig (above, n. 1); Suse, p. 156, commentary under 322.

¹⁵ Bronze \uparrow 3.78, BM 1931-4-6-201. Suse, p. 145. On the companion issue (above, n. 11) the male figure wears a short chiton, while here the female figure wears her typical long chiton.

¹⁶ Antioch on the Orontes: E. T. Newell, "The Seleucid Mint of Antioch," American Journal of Numismatics 51 (New York, 1917), pls. 5–7; CSE 143-54, 158, 160, 164-66 and 168. Tarsus: CSE 473-74. Soli: CSE 527. Nisibis may also be a possibility: Suse 572; see Morkholm, "The Seleucid Mint at Antioch on the Persian Gulf, ANSMN 16 (1970), p. 44, n. 31; P. Strauss, "Un trésor de monnaies Hellénistiques trouvé près de Suse (2e partie)," RN 1971, pp. 136-37, hereafter cited as Strauss; see also CSE 910-11. Seleucia on the Tigris: Suse, pls. 27-28; CSE 991-93 and 996-99.

¹⁷ E. T. Newell (above, n. 13), p. 147, n. 2, and "The Coinage of the Parthians" in A. U. Pope, A Survey of Persian Art (London, 1938-39), p. 477, pl. 140, G; Suse, pls. 29-30; A. Houghton and G. Le Rider, "Un trésor de monnaies Hellénistiques trouvé près de Suse," RN 1966, pls. 8-9; hereafter cited as HLR. See also, Strauss, pl. 15, and CSE, pl. 60.

issues.¹⁸ That she is Tyche would seem to be indicated by the strange creature seen supporting her throne.¹⁹ This appears to be a winged female genius, a water spirit, indicating Tyche's oceanic origin (note Hesiod, *Theogony* 360).²⁰ If our female figure is indeed Tyche, who then would her male consort be?

Carrying the same attributes, especially the cornucopia, such a figure could only be Agathos Daimon, an archaic fertility figure often assimilated with Olympian and lesser deities during hellenistic times.²¹ His image on these coins has been identified with Serapis,²² and in other art

18 Interregnum, ca. 127 B.C.: Suse, pl. 71, 1-2; D. Sellwood, The Coinage of the Parthians (London, 1980), 18.1. Artabanus I, ca. 127-123 B.C.: Suse, pl. 71, 6-10; Sellwood 21.1-4. On the tetradrachms of Demetrius I and II from Seleucia on the Tigris, Tyche holds a short scepter, while on these she holds a Nike who crowns her in exactly the same manner as the male figure on the Phraates II tetradrachms (Plate 31, D). This male figure wears the same female dress of a long chiton and has the same attributes (polos and cornucopia) as Tyche. In fact, the only major differences between the types are the beard and the form of the throne; his is supported by a sometimes exaggerated leg typical of that which supports the throne of Zeus on hellenistic coinages in general.

19 Jenkins (above, n. 11), p. 5, see his n. 16, argues for Tyche on the basis of an apparently turreted crown on this figure on the Beistegui stater (see his p. 2, I [a], "Paris, Collection Beistegui no. 37, 8.45 gm."). For cautions on the attribution to Tyche, see Newell (above, n. 16), p. 38, and Suse, p. 142; but see also Newell (above, n. 13), p. 176, where he tentatively suggests "ἀγαθη τύγη?" for this goddess.

20 Babelon, 709-20 ("Nereide ailee"); MFA 2167-70 ("winged Tritoness").

²¹ J. E. Harrison, Themis, a Study of the Social Origins of Greek Religion (London, 1912), pp. 277-88, and A. B. Cook, Zeus, a Study in Ancient Religion, vol. 2, pt. 2 (New York, 1965; reprint of Cambridge edition, 1914-25), p. 1125, n. 1. For his assimilation with Zeus — particularly with Zeus Soter (saviour of the city) — see Harrison, p. 283; Cook, p. 1129, n. 1 from p. 1125, and pp. 1159-60. As Hermes, Harrison, pp. 294-97; and as Herakles, Harrison, p. 381. See above, n. 9.

²² See above, n. 9. Küthmann bases his attribution on the similarity of the figure with various votive statuettes, bearded and also holding patera and cornucopia, which have been labeled "Serapis"; C. Vermeule, *Greek and Roman Sculpture in Gold and Silver*, Museum of Fine Arts (Boston, 1974), no. 13, with references. The examples cited by Küthmann range from Epiros to Seleucia on the Tigris, yet there is no certain evidence that these votive pieces were, in every case, worshipped as Serapis over such a broad area.



forms he has been called Sabazios.²³ His name means "good spirit"²⁴ and his obvious consort would be Agathe Tyche ("good fortune").²⁵ That he is the husband of Agathe Tyche is verified by an Attic relief depicting a banquet scene. He appears with the appellative "Zeus Epitelios, Philios," holding his cornucopia and reclining beside his wife. The architrave has an inscription identifying "... Tyche Agathe (as) the god's wife,"²⁶ A correlative monument of Agathos Daimon and Agathe Tyche in their anthropomorphic versions can be seen in a relief from Delos, wherein the Agathodaemon serpent dominates the central motif (Plate 31, E).²⁷ Here the male and female figures, on either side of the large bearded serpent, share the same attributes of polos, cornucopia and long chiton as on our Demetrius II bronzes. Another relief, of imperial date, from Epidauros again depicts the bearded Agathos Daimon with his cornucopia, while incorporating his serpent incarnation as a lesser part of the motif.²⁸

Agathos Daimon and Agathe Tyche are not deities with specific personalities, as were the Olympian gods of Homer, but are rather more generic in nature. They are manifestations of the *demoi* in a collective sense, where various appellatives have been attached to them from place



²³ See Vermeule (above, n. 22), no. 37, for a statuette of "Dionysos-Sabazios" which is identical in every respect, save style, with those mentioned by Küthmann. Bronze votive plaques, of imperial date from Razgrad, depict Sabazios as a horseman holding a cornucopia: R. F. Hoddinott, Bulgaria in Antiquity (New York, 1975), p. 165. Another chthonian fertility god with attributes of patera and cornucopia, "probably Zalmoxis," can be seen in the Theos Megas at Thracian Odessos, whose votive statuettes are often crowned with ivy, or vine, in a Dionysiac fashion: Hoddinott, p. 50. Cook (above, n. 21), p. 1126, n. 1, equates the Theos Megas with Agathos Daimon; see also, HN, pp. 276–77, fig. 167, and BMCThrace, p. 138, fig.

²⁴ M. Collignon, *Manual of Mythology* (London, 1899), p. 305, where it is suggested that he might represent "Kairos" (opportunity).

²⁵ Pausanias 19.39; Harrison (above, n. 21), pp. 284-85; Cook (above, n. 21), p. 1125, n. 1.

²⁶ Harrison (above, n. 21), pp. 312-13, fig. 90; Cook (above, n. 21), pp. 1162-63, fig. 970.

²⁷ M. Bulard, "Bas-relief se rapportant au culte d'Agathodaimon," *BCH* (1907), pp. 525-29, fig. 24; Cook (above, n. 21), p. 1128.

²⁸ Harrison (above, n. 21), pp. 285-86, fig. 75; Cook (above, n. 21), p. 1126.

to place over time.²⁹ As noted above (Plate 30, A)³⁰ this divine couple iconography appears on a large autonomous bronze issue from Seleucia on the Tigris—and we might also see the same concept on the later civic, jugate-bust bronzes listed by Le Rider from this city.³¹ On these we see the bust of a bearded male figure wearing a polos, jugate with that of Tyche who wears her typical "city goddess" turreted crown. The civic (or demotic cult) nature of the divine couple iconography is strongly suggested by these examples.

Agathos Daimon, like Agathe Tyche as the "good fortune" of the demos, is a similar conceptual representation of the "good spirit" of departed ancestors.³² He is a protective spirit of the family, from that of the individual citizen to that of the king, and in a broader sense he may represent the heroic ancestral heritage of the state.³³ He is the seed carrier, the genetic code or paterfamilias of the family, the demos, the polis and of the royal line. His function is that of progenitor, the male force—hence, his usual attribute of fruitfulness and fertility, the cornucopia.³⁴ The function of his consort, Agathe Tyche, is that of generatrix or seed receiver; the two together symbolizing procreation and continued existence for the clan, the city and the people at large.

Macrobius³⁵ brings this concept down to the level of the individual through an astrological interpretation: the zodiacal position of the sun



²⁹ Harrison (above, n. 21), pp. 279, 288, 302-3; Cook (above, n. 21), p. 1160. In Mesopotamian mythology we find a similar oriental counterpart to the Agathos Daimon and Agathe Tyche couple in the protective spirits of the individual and of the royal line, known as "šēdu" and "ištaru" (Ištar): A. L. Oppenheim, Ancient Mesopotamia, Portrait of a Dead Civilization (Chicago-London, 1977), pp. 198-206, particularly pp. 201 and 205. See above, n. 9.

³⁰ See above, n. 14.

³¹ Suse 348, pl. 33.

³² Cook (above, n. 21), p. 1125, n. 1. See above, n. 9.

³³ Harrison (above, n. 21), pp. 288 and 303; E. Saglio, "Agathodaemon," *DarSag*, p. 131.

³⁴ J. C. Nitzsche, *The Genius Figure in Antiquity and the Middle Ages* (New York-London, 1975), p. 8.

³⁵ Ambrosii Theodosii Macrobii Saturnalia 1.19, 16–19, in *Macrobius* (2 vols.), ed. Iacobus Willis, Bibliotheca Scriptorum Graecorum et Romanorum Teubneriana (Leipzig, 1970); see Nitzsche (above, n. 34), p. 23.

at an individual's birth determines his mental and physical characteristics, his predisposition or daimon; while the natal position of the moon determines his fate or fortune in life, his tyche. Thus, the daimon provides the seed (propensities), while tyche carries it to term (fate or actuality). These two deities then, which by definition lack specific personalities, are strictly functional in concept and they comprise the divine couple.

There is evidence that they were sometimes conceptually merged. A bronze issue of imperial date from Melos³⁶ shows Tyche as a bearded male figure standing in the same posture and with the same attributes as the more orthodox female Agathe Tyche, who figures on a relief excavated by the British School at Melos in 1896.³⁷ Another issue of imperial date personifies the Agathos Daimon concept by incorporating the Dionysiac attribute of a thyrsos into the motif of a city-god wearing the turreted crown of Tyche—a "young Dionysos as city-god"—at Teos.³⁸

An example of such gender transference, or androgyny, might be seen in the bearded figure appearing on the Phraates II tetradrachms (Plate 31, D). This figure has been identified as the "Asiatic Dionysos" by E. T. Newell.³⁹ While he lacks specific Dionysiac attributes,⁴⁰ he does have the polos and cornucopia and sits in exactly the same posture as the Tyche so common on the preceding tetradrachm issues from Seleucia on the Tigris.⁴¹ On these issues the Agathos Daimon figure would seem to supplant the Tyche figure from the preceding Seleucid issues, perhaps because of the transference of dynastic hegemony.



³⁶ F. Imhoof-Blumer, *Griechische Münzen* (Munich, 1890), p. 23, 66, pl. 2, 8, which he believes to be a die engraver's mistake; Cook (above, n. 21), p. 1136, n. 4, and Nitzsche (above, n. 34), p. 145, n. 5.

³⁷ JHS 28 (1898), p. 60, fig. 1; Harrison (above, n. 21), p. 284, fig. 74.

³⁸ BMCIonia, pp. 317-18, 56, 61-66, pl. 30, 17; see L. R. Farnell, The Cults of the Greek States 5 (Oxford, 1909), p. 338, pl. B, 21.

Newell (above, n. 13), p. 175; see above, n. 21, for examples of the apotheosis of the daimon figure. For the androgynous nature of the figure, see Dayet (above, n. 13). See Seyrig (above, n. 9), fig. 9 ("Zeus Bêlos?").

⁴⁰ MFA, p. 290, commentary under 2213, where he is thought to be the Babylonian equivalent of a "Greek city-god." See above, n. 9.

⁴¹ See above, n. 18.

THE REIGN AND THE MINT

E. T. Newell attributes the divine couple bronzes of Demetrius II to Seleucia on the Tigris, based upon the similarity of their reverse type with that of the autonomous issue illustrated here (Plate 30, A).⁴² However, the larger flans and the presence of control marks or monograms on the Demetrius II coins represent characteristics quite inconsistent with the bronze production of Seleucia at this time.⁴³ No examples of this issue are reported from the Seleucia excavations (nor from any other excavations) and the slim provenance records that we have seem to point to a northern Mesopotamian mint.⁴⁴ The large number of extant specimens indicates an extensive issue over a prolonged period, which makes their absence in the Seleucia excavations strongly suggestive of another, perhaps closely associated, mint employing the same demotic cult iconography so prominent on the Seleucian issues.⁴⁵

If we remove the divine couple types of Demetrius II from Seleucia on the Tigris, then, to which reign of this king do these issues belong? On the one hand, the inscription, lacking the epithet "Philadelphou," sug-



 $^{^{42}}$ E. T. Newell, review of *Coins from Seleucia on the Tigris* by Robert Harbold McDowell (Ann Arbor, 1935) in AJA 41 (1937), p. 516. See above, n. 14. Any attribution of the Demetrius II coins to Seleucia on the Tigris presumes his first reign, since after the defeat of Antiochus VII Seleucia was never again under Seleucid authority.

⁴³ The bronze production of Seleucia on the Tigris during the reigns of Demetrius I, Alexander I and Demetrius II consistently utilized smaller flans, without control marks or monograms, and usually incorporated a dotted border on the reverse; the divine couple bronzes of Demetrius II never have any sort of reverse border; Suse, pl. 27, O, and pls. 28–30.

⁴⁴ Examples have appeared in the markets of Beirut, Damascus and Tehran (7, 22 and 24), while 14 appears to be from eastern Syria. In a letter of 30 March 1984, Mr. Levante relates that this piece came from a large collection accumulated during the 1920s by the Catholic Archbishop of Aleppo, which was formed exclusively in eastern Syria and Mesopotamia where he had his constituancy. Mr. Spaer relates that 28 was acquired directly from a dealer in Jerusalem.

⁴⁵ Sec Suse, pp. 152-53, for further reservations about the attribution of these issues to Seleucia.

gests the second reign,⁴⁶ while on the other, the portrait, ranging from beardless to lightly bearded, appears to be that of an adolescent. This accords closely with what we might expect of a portrait of the young king, who would have been about 20 years of age when he embarked upon his eastern campaign against the Parthians in 140 B.C.⁴⁷

The numismatic evidence indicates that Demetrius was released from Parthian captivity and immediately commenced his second reign with a quite full beard. That he arrived at Antioch on the Orontes in the spring of 129 B.C. with an already advanced growth of beard is attested to by his portrait on the brief series of tetradrachms struck there until no later than the spring of 128 B.C., while his tetradrachms struck at Damascus in the year $\Gamma\Pi P$ (183 S.E. = spring - Oct. 129 B.C.) also depict him with a full beard. It would be logical to assume that, upon his arrival at Antioch, Demetrius would have immediately ordered the issuance of coinage with his true effigy—and that the die cutters there would have been constrained to copy his actual features. Given the examples from Damascus noted above, dated to a period of no longer than six months, and the fact that we have no dated issues from the second reign portraying Demetrius with anything less than a full beard, one can assume



⁴⁶ CSE, above, n. 7.

⁴⁷ See E. R. Bevan, The House of Seleucus 2 (London, 1902), p. 232 and Appendix R.

⁴⁸ MacDonald's attribution (Hunter 3, p. 89) of the Demetrius II divine couple to the second reign is based upon the evidence of a tetradrachm dated 183 A.S. (ie., spring-Oct. 129 B.C.), formerly in the Bunbury collection (see Edward H. Bunbury "Rare and Unpublished Coins of the Seleucidan Kings of Syria," NC 1883, pp. 100–102, pl. 6, 4), which would appear to display a very slight beard with a moustache. E. T. Newell, Late Seleucid Mints in Ake-Ptolemais and Damascus, ANSNNM 84 (1939), p. 50, has since expressed the opinion that the full beard on this coin "has been tooled away in modern times." Dr. Price has informed me that the bronze coin of Sidon in the British Museum trays dated 182 A.S. (Oct. 131-Oct. 130 B.C.), which was formerly attributed to Demetrius II by Gardner (BMCSel, p. 79, 27), has now been transferred to Antiochus VII on the basis of the portrait. A photo of this coin, kindly provided by Dr. Price, seems to confirm the new attribution, which might serve to dispel any arguments, based upon this piece, that Demetrius II was released several months prior to the defeat of Antiochus VII by Phraates II in spring of 129 B.C.

⁴⁹ See Newell (above, n. 16), p. 84, pl. 10, nos. 20-21; also, Newell (above, n. 48), pl. 8, no. 67.

that he adopted the oriental custom of growing a long beard while in Parthian captivity.

As noted above, the lightly bearded bronze issues are of such quantity as to suggest a prolonged period of production, perhaps lasting a year or more. This reinforces the notion that we have here the portrait of an adolescent, not a mature man as Demetrius had become when commencing his second reign in 129 B.C.

It therefore seems likely that the lightly bearded types of Demetrius II were issued during the latter part of his first reign, while he was campaigning against the generals of Mithradates I, between spring of 140 B.C. and his capture in spring or summer of 139 B.C. 50 Seleucia on the Tigris had been occupied by Mithradates I by July of 141 B.C.,⁵¹ apparently without resistance,52 while Demetrius was preoccupied with the usurper Tryphon in the western part of his empire. It was not until spring of the following year that Demetrius was able to raise a counteroffensive against the Parthian king. It was, no doubt, his intention to reclaim the eastern provinces from the Parthians so that he might use the resources and manpower there to fuel his war effort in the west.⁵³ The numismatic evidence from Dura-Europos indicates that Demetrius did not take the southern route into Babylonia, but more than likely marched into the east along the northern route through Upper Mesopotamia and down the Tigris (if, in fact, he did not march directly into Media).⁵⁴ Situated along this route was the major Graeco-Macedonian city of Nisibis, which had operated previously as a Seleucid royal mint.55



⁵⁰ On the dating of his eastern campaign see Suse, pp. 362 and 370. See also, 1 Macc. 14. On the date of his capture see Suse, p. 369, n. 1, and p. 371.

⁵¹ A. T. Olmstead, "Cuneiform Texts and Hellenistic Chronology," ClassPhil 32 (1937), p. 13.

⁵² McDowell (above, n. 14), p. 219.

⁵³ See 1 Macc. 14 and Joseph., AJ 13, 184-86.

⁵⁴ A. R. Bellinger, The Excavations at Dura-Europos, Final Report 6: The Coins (New Haven, 1949), p. 199.

⁵⁵ See E. T. Newell, WSM, pp. 56-78, pls. 7-12. Royal issues were produced at Nisibis from the reign of Seleucus I continuously through that of Antiochus III; but see also, CSE, p. 91, where the coinage is said to begin with Antiochus II. Although its production peaked during the reign of Antiochus III, Nisibis continued to issue tetradrachms under Seleucus IV: O. Mørkholm, "Le monnayage de Séleucus IV a Nisibe," RN 1965, pp. 44-50. No royal issues are known during the reign of Antio-

Strategically located along a major east-west transit route and military highway, Nisibis would have made an ideal staging area and base of operation for the eastern campaign of Demetrius II. In all probability, he followed in the footsteps of Antiochus III, whose own eastern anabasis through this city proved to be far more successful.⁵⁶

It is to Nisibis then, that we would attribute the divine couple bronzes of Demetrius II, rather than to Seleucia on the Tigris. This city was previously a royal mint and lies along the most likely route of his march into the eastern provinces. The stylized portrait of Series 1 suggests that the die cutters were not initially familiar with his true likeness, perhaps indicating a start-up operation, and the volume of the issue would seem to preclude Seleucia on the Tigris as a possibility after its occupation by Mithradates I in mid-141 B.C.⁵⁷ The placement of the diadem end over the neck on Series 2 is out of keeping with the stylistic tradition of Seleucia, ⁵⁸ while at Nisibis we find this stylistic device

chus IV, only municipal bronzes with his portrait, however Nisibis may have resumed marginal operation as a royal mint under Demetrius I (see above, n. 16) and Alexander I (note commentary under CSE 1003). In a letter to the writer dated 30 March 1982, Mørkholm expressed the opinion that the tetradrachms of Demetrius I (Suse 572) and Alexander I (Suse 311), with monogram & or &, "may belong to Nisibis." He suggested that Suse, pl. 29, A (Alexander I), might represent the transference of an obverse die from Seleucia on the Tigris to Nisibis.

⁵⁶ WSM, pp. 69 and 75-76. Arthur Houghton, in "The Elephants of Nisibis" in this issue of ANSMN, presents convincing evidence that a number of issues of Antiochus III, previously assigned to Ecbatana by E. T. Newell, may now be given to Nisibis, thereby emphasizing the importance of this city as a major provincial mint under the Seleucid kings.

⁵⁷ The Parthian issues of Mithradates I at Seleucia began shortly after the city's occupation in July of 141 B.C. and continued, in regular succession (with dated issues of 140/39 and 139/38 B.C.), until his death; see *Suse*, pp. 369 and 371. It seems unlikely that Demetrius II could have retaken Seleucia for any length of time sufficient to explain the volume of the divine couple production, while the issues of the Parthian king at this city do not seem to have been seriously interrupted; see *Suse*, p. 372.

⁵⁸ A minor exception to this can be noted for two issues of Demetrius I; Suse, pl. 27, B and D.



employed, in imitation of the Antioch issues, during the latter part of the reign of Antiochus III and continuing into the reign of Seleucus IV.59

The ancient city of Nisibis has not yet been scientifically excavated, but a coin hoard found in its environs, published by Henri Seyrig, has 12 examples of an anonymous bronze issue⁶⁰ depicting a sometimes laureate, sometimes diademed, bearded head on the obverse, while the reverse carries the turreted head of Tyche, who is sometimes diademed, sometimes not. These issues are dated to approximately the first half of the first century B.C. and are considered by Seyrig to represent a divine couple. Although he tentatively suggests an attribution to the Arab king of Osrhoene, Abgar II, the issue is without inscription and the quantity suggests a local origin. On these the male figure is conveniently identified as Zeus, yet we might remember that the male counterpart and husband of Tyche was Agathos Daimon—who was often assimilated with various forms of Zeus in demotic cult practices. These issues, lacking royal or civic inscriptions, would appear to be of a purely demotic nature in a region where royal sovereignty remained uncertain.61 The existence of this issue suggests that an iconography of "the people," a cult of the demos, which had found its manifestation on the bronze issues of Demetrius I at Seleucia on the Tigris during a time of contest for sovereignty, 62 had, by this time, become a somewhat standardized formula on the coinages of Upper Mesopotamia during times of stress when regal authority was in question. We might here recall the divine couple bronzes of Demetrius II, which may very well be from Nisibis, and which were issued during a time when the fate of the Graeco-Macedonian inhabitants of the eastern provinces was placed in jeopardy by the Parthian invasion. The bronze issues were meant for local circulation and their



 $^{^{59}}$ WSM, p. 78, pl. 12, 12-14; CSE 905-6. A drachm of Demetrius II (Naville 10, 15 June 1925, 1197 = SNGLockett 3152), which is dated 173 S.E. = 140/39 B.C. and may be from Seleucia Pieria, clearly shows the diadem end draped over the neck and is an instance of this stylistic device employed at a western mint concurrently with the divine couple bronzes in Mesopotamia. See comment under CSE 875.

⁶⁰ Above, n. 1, pp. 88-89, nos. 8-12, and reference to the divine couple on p. 106.

⁶¹ Seyrig (above, n. 1), p. 107. See above, n. 9.

⁶² The campaign of Demetrius I against the rebel Timarchus; note the issues on Plate 31, B and C.

iconography would naturally be oriented toward the local populace, while the tetradrachms, which were meant for international trade, had types that referred to the royal cult formulae.

TETRADRACHMS

The following tetradrachms of Demetrius II have a lightly bearded profile which is close to the divine couple bronzes.

Obv. Diademed, lightly bearded head of Demetrius II r. Fillet border.

Rev. BASIAE $\Omega\Sigma$ AHMHTPIOY Θ EOY NIKATOPOS Nude Apollo seated 1. on omphalos, holding arrow and bow.

Tetradrachms

*A1-P1	14.89	Naville 10, 15–18 June 1925, 1180.
*A1-P2	14.70	Babelon 949.
*A1-P2	† 16.32	HLR 140.
*A1-P3	† 16.24	HLR 141.
*A1-P4	16.12	HLR $142 = CSE 1015$.
*A2-P5	1 16.20	HLR $143 = CSE 1014$.
A2-P5	15.15	Florange-Ciani, 17-21 Feb. 1925 (Allotte de la
		Fuÿe), 860.
*A3-P6	16.15	Strauss 129 = Hess-Leu 45, 12 May 1970, 349.

On this series of tetradrachms⁶³ there are no monograms or control marks by which we might establish an internal chronology, therefore they are listed in a tentative chronological sequence based upon the apparent degree of maturity of the portrait (Plate 31). The profile and general characteristics of the portrait of die A1 are so close to those on the bronzes of Plate 30, 14–18, that we can assume they belong to the same school of die cutters, if not the same hand. Furthermore,



⁶³ Eight examples are known to the writer, five of which are from the Susiana hoard of 1965; see HLR (above, n. 17), 140-43, and Strauss 129.

the portrait of die A3 and that of Plate 30, 29, actually appears to have been engraved by the same hand.⁶⁴

Given the very similar portrait style of the tetradrachms and the bronze issues of Series 2 and the fact that they carry the same fillet border on the obverse, it can be suggested that they were produced by the same mint. In the catalogue are listed three obverse and six reverse dies for the tetradrachms, which suggests a production period lasting from one to two years. This roughly parallels the estimated length of production for the divine couple bronzes, as noted above, and would serve to exclude Seleucia on the Tigris as a possible mint for the tetradrachms, based upon the same arguments put forth for the bronze issues. See

The tetradrachm reverse presents the seated Apollo, a type appearing on the tetradrachms of Demetrius II only during his first reign.⁶⁷ The first tetradrachm issues of Demetrius at Seleucia on the Tigris are of this type, in contrast to his later issues there with the seated Tyche type.⁶⁸ We may see, in the use of the seated Apollo type on his inaugural issues, both at Antioch in the west and at Seleucia in the east, a precedent for another inaugural issue at Nisibis later in his first reign which perhaps celebrates not only his arrival at manhood with the slight beard, but also

- 64 Arthur Houghton, in a letter of 6 May 1984, concurs.
- ⁶⁵ An estimate suggested by Arthur Houghton, in a letter of 27 March 1984.
- drachms of Demetrius II at the end of his first reign, but he considers this to be a brief period between 140 and 139 B.C. at Seleucia on the Tigris. The stylistic and technical similarities between the lightly bearded tetradrachms and the earlier types of Demetrius II at Seleucia, which he points out on pp. 119 and 129, may simply reflect an affinity of modus operandi between the mints of Seleucia and Nisibis. The mint of Nisibis, due to its geographical location, was known to have borrowed stylistic elements from both Antioch on the Orontes and Seleucia on the Tigris during previous reigns; WSM, pp. 67, 77 and 78. As a comparable issue, particular note should be made of the group of tetradrachms with a lightly bearded portrait of Seleucus II, which have been assigned to Nisibis by Newell, WSM 818-23, pl. 8, 1-7, and p. 64, and which were associated with that king's Parthian campaign.
- ⁶⁷ A type common on the issues of his western mints, particularly at Antioch on the Orontes upon the commencement of his first reign; Newell (above, n. 16), pl. 8.
 - 68 HLR 114; Strauss 122 = CSE 1007.



the reassertion of his legitimacy as the rightful heir to the Seleucid throne upon the commencement of his eastern expedition.

Unlike the tetradrachms of Demetrius II at Seleucia on the Tigris (the later Tyche types always carry monograms), these lightly bearded issues are lacking control marks or monograms and display the epithet "Theou" (of god), which we do not find on any of the coinages of Demetrius at that mint. It seems evident that Demetrius dropped the epithet "Philadelphou" (of the brother lover), substituting instead the more forceful title of "Theou Nikatoros" (of the conquering god) on the tetradrachms of his only remaining eastern mint, Nisibis, during his Parthian campaign.⁶⁹

In summary, it would appear that the lightly bearded tetradrachms and bronzes of Demetrius II form a cohesive and compact group of issues produced at a major provincial mint in the east during the latter part of his first reign. Historical and technical considerations as well as the volume of issue for both series would seem to exclude Seleucia on the Tigris as a possible mint, although certain iconographic and stylistic characteristics incorporated into the production of this group of issues seem to have been borrowed from Seleucia. Considering the Parthian occupation of the former Seleucid cities of Ecbatana, Susa, and Seleucia on the Tigris at this time, and the provenance of the bronzes, Nisibis—with its past history as a royal mint—would seem to be the only probable mint for this group of issues east of the Euphrates.



⁶⁹ See Strauss, p. 130; see also Bikerman (above, n. 7).

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A NEW INTERPRETATION OF THE REVERSE OF HEROD'S LARGEST COIN

(PLATE 32)

DAVID M. JACOBSON

INTRODUCTION

The principal object shown on the reverse of the largest coin of Herod the Great¹ (Plate 32, 1 = SNGANS 6, 195) has been a matter of much debate. The various proposals put forward prior to 1959 have been reviewed by Meyshan.² For the most part, opinion on the coin design is divided between two fundamental interpretations. Madden, Hill and others identified the object as some type of helmet or ceremonial head-dress. Most recently, Meshorer has joined this camp: in his latest cata-

¹ For example BMCPalestine, pp. 220-21, nos. 1-10, and Y. Meshorer, Ancient Jewish Coinage 2: Herod the Great through Bar Cochba (Dix Hills, New York, 1982), p. 235, nos. 1, 1a-c, hereafter cited as Meshorer. Meshorer's definitions of "reverse" and "obverse" for Herod's coins are adopted here. For a recent discussion of the denominations of Herod's coins, see Meshorer, pp. 13-16.

I wish to thank G. B. Waywell of King's College, London, for his encouragement of this study. I am also indebted to the staff of the Coin Department of the British Museum for the kindness shown to me on my many visits there, and especially to I. A. Carradice, M. J. Price and J. E. Cribb for their helpful comments and advice. The permission of the Trustees of the British Museum to reproduce the photographs of coins included with this article is gratefully acknowledged.

² J. Meyshan, "The Symbols on the Coinage of Herod the Great and Their Meanings," *PEQ* 91 (1959), pp. 109-21.



logue he describes the object as a "helmet with cheek pieces and star on top." Rival opinion asserts that it is a type of incense burner, known to the Greeks as a thymiaterion ($\theta v \mu \iota \alpha \tau \eta \varrho \iota o v$). This second interpretation was championed by Wiegand and Watzinger and has since received support from Kanael and Kindler, for example, who consider that Herod would have wished to include symbols of the Jewish Temple cult on his coinage.

There are, however, a number of difficulties with the thymiaterion theory. To begin with, the palm branches shown flanking the conical object have no obvious connection with a thymiaterion. They would therefore constitute a separate device which would need to be explained. An even more serious weakness with this proposal is the fact that the main motif bears little resemblance to the thymiateria depicted on other ancient coins. Typically these vessels take the form of candelabra, with a tripod or conical base and a slender stem articulated by a series of knops or petala terminating in a small bowl occasionally capped by a conical cover. Wiegand lists a selection of representative examples drawn from ancient Greek coinage where, it may be noted, the thymiateria appear mostly as lesser symbols. He also describes incense burners of a shorter, stockier form that gained currency in later hellenistic and Roman Imperial times. These, however, maintained the clear division of base, stem



³ Meshorer, p. 235. In earlier pages of this work (pp. 18-20) Meshorer referred to this item as an apex, a kind of sacerdotal miter donned by the flamines, which he claimed was copied from Roman republican coins. However, the apex shown on a Roman issue cited by him as an example lacks the star that is such a prominent feature of the design on Herod's coin.

⁴ K. Wiegand, "Thymiateria," Bonn Jb 122 (1912), pp. 27, 79; C. Watzinger, Denkmäler Palästinas (Leipzig, 1935), p. 24 and n. 1; see also E. W. Klimowsky, The Dating and Meaning of Ancient Jewish Coins and Symbols, Israel Numismatic Society Publication 2 (Jerusalem, 1958), p. 82, n. 19. On thymiateria, see also RE 6A.1, cols. 706-14, s.v. "thymiaterion" (Hug).

⁵ B. Kanael, "Ancient Jewish Coins and Their Historical Importance," *BA* 26 (1963), p. 48.

⁶ A. Kindler, Coins of the Land of Israel: Collection of the Bank of Israel, a Catalogue (Jerusalem, 1974), p. 29.

⁷ Wiegand (above, n. 4), pp. 52-54.

and bowl and are still taller than they are wide. This class of vessel is much less frequently represented on the coins.8

It was Wiegand, in his comprehensive survey of thymiateria, who first saw on Herod's coin a representation of an incense burner. The grounds for his attribution are unclear and are nowhere described. His drawing of the object provides few clues: it is wholly incongruous among the illustrations of incense vessels shown in pl. 4 of his article. Unlike its companions, this item has an exceptionally wide base and it lacks a well-defined stem. The ogival shaped "cover" is abnormally large in comparison and, uniquely among the examples illustrated, it terminates in a star.

In a footnote, Wiegand acknowledged the alternative explanation but he summarily dismissed it, pointing out that the helmets depicted on the coins of that period are all completely different. His statement would be correct if one were to assume, as he did, that the object in question is a single entity. Doubts about the truth of this assumption were confirmed by a close examination of the ten specimens of Herod's large bronze issue in the British Museum collection. One observation, in particular, seemed to tip the argument, namely that the base of the "utensil" is always separated from its "cover" by a gap in the embossed design, which is clearly seen in Plate 32, 1. Therefore, these two elements can be regarded as representing distinct objects. This proposition is taken as the starting point for the new interpretation that follows.

IDENTIFICATION OF THE SYMBOLS

The Dioscuri Pilos

Meshorer had previously entertained the idea that the principal object depicted on Herod's coin might be a "Dioscuri helmet," but at that time, he thought that it might equally well be a thymiaterion. Having recognised that the object is actually a composite of two separate articles, it is possible to explore Meshorer's earlier proposal more systematically.



⁸ See the examples referred to by Wiegand (above, n. 4), pp. 72-79.

⁹ See Wiegand (above, n. 4).

¹⁰ Wiegand (above, n. 4), p. 79, n. 1.

¹¹ Y. Meshorer, Jewish Coins of the Second Temple Period (Tel Aviv, 1967), p. 65.

The Dioscuri cap, or pilos $(\pi i \lambda o \zeta)$, is distinguished by its conical shape and the star of eight or sometimes six rays that usually constitutes its crowning member.¹² In the finer renderings, this hat is adorned with a laurel wreath and equipped with a pair of straps which are shown hanging down. A pair of these piloi are shown on a bronze piece issued close in time and place to Herod's Judaea by one of the later Seleucids, Antiochus X (BMCSeleucids, p. 97, 5 = Anson 4,447; Plate 32, 2, ANS). The upper feature shown on Herod's coin matches such representations fairly well.

A possible criticism of this suggestion might be that the shape of the presumed hat on the coin generally deviates from that of the normal pilos, by being more squat and ogival in outline. This argument can be countered by pointing out that the shape of the hat is by no means consistent on the Herodian issue, and that depicted on one of the pieces in the British Museum collection, *BMCPalestine*, p. 220, 5, closely approximates the regular conical pilos. Strict comparisons of Herodian coin types with those from other mints are unrealistic because the artistry of the former tends to be somewhat cruder than that normally encountered on Greek and Roman coins. One only has to contrast the galley with oars and aphlaston primitively represented on a small bronze of Herod (*BMCPalestine*, p. 227, 75–77; Meshorer, p. 238, 22, 22a-b) with the beautifully executed vessels of similar type found on some of the nearly contemporary issues of Sidon and Tyre (e.g. *BMCPhoenicia*, pp. 163–65, 130–42, and pp. 255–56, 252–67) to appreciate this difference in artistic quality.

The Couch

The lower part of the main motif shown on the reverse would seem to represent a support for the ogival shaped object: thus Wiegand supposed that it was the base of a thymiaterion. It appears to have a single pair of legs and two upward curling finials at either end, joined by a horizontal strip carrying an ornamental band with transverse channels. The object might be interpreted as a table but then, as now, tables had plain flat



¹² For the representation of Dioscuri piloi on Greek coins, L. Anson, Numismata Graeca: Greek Coin Types (London, 1913), 4, nos. 431-73; hereafter cited as Anson. These and other examples are discussed below.

tops.¹³ Just such an item of furniture, the Table of the Showbread from the Temple to be precise, appears on the obverse of the so-called "Menorah" coin issued by Herod's immediate predecessor, Mattathias Antigonus, the last Hasmonaean monarch (*BMCPalestine*, p. 219, 56; Meshorer 1, p. 159, Z1–Z3).¹⁴ Besides having a flat top, this table is depicted with four legs.

The type of appurtenance represented on Herod's coin is, in fact, disclosed by the pair of finials at either end. These mark it out as a couch (kline $[\varkappa\lambda i\nu\eta]$ or lectus). The Greeks employed two basic types of couch. One had posts at the two ends protruding above the horizontal railing. It was usual for these posts to be crowned by decorative volutes. The second type of couch, which was also much used by the Romans, had dismountable head and foot rests, known as anaklintra $(a\nu a\varkappa\lambda \iota\nu\tau\varrho a)$ or fulcra: these too, rose above the level of the railing and commonly terminated in spirals. The railings of both types of couches were often enriched with a band of ornament. It is notable that the bands of decoration along the horizontal strip and spiral-shaped finials are prominent features of the base on which the pilos rests. There can be little doubt, then, that the lower part of the composition is meant to represent a couch.

Thus, a close analysis of the coin indicates that the obverse design portrays a hat of the Dioscuri mounted on a couch and flanked by palm branches. I shall now attempt to buttress this interpretation by showing that it is also consistent with certain other evidence. While the design in question does not exactly match that on any other ancient coin, it fits well within the range of subjects that were employed by various minting authorities.



¹³ The various types of tables used by the Greeks and Romans are described in G. M. A. Richter, *The Furniture of the Greeks, Etruscans, and Romans* (London, 1966), pp. 63-72 and 110-13.

¹⁴ See Y. Meshorer, Ancient Jewish Coinage 1: Persian Period through Hasmonaeans (Dix Hills, NY, 1982), pp. 94-97.

¹⁵ See H. Kyrieleis, "Throne und Klinen," *JdA1-Ergänzungsheft* 24 (1969), pp. 116-31 and 168-73; also Richter (above, n. 13), pp. 52-63.

¹⁶ On Roman couches, see R. V. Nicholls, "A Roman Couch in Cambridge," *Archaeologia* 106 (1979), pp. 1-32; also Richter (above, n. 13), pp. 105-9.

DIOSCURI THEMES ON CLASSICAL COINAGE

Dioscuri themes enjoyed much favor on the coins of southern Italy and Sicily from the third century B.C.¹⁷ They are most often represented together on horseback, charging into battle with couched lances; each wears a chlamys $(\chi\lambda\tilde{a}\mu\dot{v}\varsigma)$ and the characteristic pilos, usually surmounted by a star. Examples include Nuceria Alfaterna (BMCItaly, p. 121, 7); Caelia (BMCItaly, p. 134, 9); Tarentum (BMCItaly, p. 160, 5, p. 172, 97); Bruttii (BMCItaly, p. 320, 8, and BM 1946-1-1-541; Plate 32, 3, ANS); Luceria and Teanum (BMCRR 2, pp. 186-87, 181); Canusium(?) (BMCRR 2, pp. 187-88, 182-86); Tyndaris (BMCSicily, p. 235, 6-7, p. 236, 8, and Syracuse (BMCSicily, p. 225, 678).

However, nowhere are the Dioscuri given greater prominence than on the coins of the Roman Republic, where they were one of the principal coin types from the early second to the first century B.C. (Syd. 140–42, 144, etc.), indicating that Rome was one of the main centers of this popular cult in Italy. The cult was introduced there at an early date, traditionally in 484 B.C., ¹⁸ in consequence of the vow made by the Roman general A. Postumius at the celebrated battle of Lake Regillus in ca. 496 B.C. The story arose that the Dioscuri actually had fought alongside the Romans on that fateful occasion. ¹⁹ Apparently, the cult of Castor and Pollux (or Polydeuces) was introduced from Tusculum. ²⁰ There is an inscription which indicates that the cult of the Dioscuri was known at neighboring Lavinium in ca. 500 B.C. ²¹ It would have reached Latium from Greece via southern Italy. ²² The story of the appearence of



¹⁷ For the Dioscuri and their representation in various art media, see RE 5.1, s.v. "Dioskuren," cols. 1087-1123 (Bethe); F. Chapouthier, Les Dioscures au service d'une déesse (Paris, 1935); F. Brommer, Denkmälerlisten zur griechischen Heldensage 3 (Marburg, 1976), s.v. "Dioskuren," pp. 83-98.

¹⁸ Livy 2.20.12, 2.42.5.

¹⁹ Cic., Nat D. 2.6; Dion. Hal., Ant. Rom. 6.13.1-2.

²⁰ G. Wissowa, Religion und Kullus der Römer, Handbuch der Klassischen Altertums-Wissenschaft 5.4, 2nd ed. (Munich, 1912), pp. 269-70.

²¹ S. Weinstock, "Two Archaic Inscriptions from Latium," JRS 50 (1960), pp. 112–14.

²² M. Albert, Le Culte de Castor et Pollux en Italie, Bibliothèque des École française d'Athènes et de Rome 31 (Paris, 1883), pp. 8-20.

the heavenly twins at Lake Regillus was evidently inspired by the legend of a similar intervention at the battle of the Sagra fought on the toe of Italy in the sixth century B.C.²³ In this engagement the Dioscuri were reputed to have lent their aid to the forces of Locri Epizephyrii against those of neighboring Croton.

Italian coins also show busts of the Dioscuri wearing their piloi. Examples include Bruttii (BMCItaly, p. 320, 8, and BM 1946-1-1-541; Plate 32, 3, ANS); SNGCopItaly, 1981-85); Paestum (BMCItaly, p. 274, 5; p. 281, 72; Locri Epizephyrii (BMCItaly, p. 369, 40; SNGCopItaly, 1895-96); Rhegium (Hunter 1, pp. 145-46, 53-58); Metapontum (Hunter 1, p. 95, 62); Luceria (SNGCopItaly, 664); Panormus (BMCSicily, p. 123, 21); Syracuse (SNGCopSicily, 890).

On two early bronze pieces of Rome (ca. 275–270 B.C.), the head of one of the Dioscuri is shown wearing a pilos (Crawford 18/5 and 19/1). The bust of a single Dioscurus wearing a laureate pilos with the star appears on a denarius of the Marsic Confederation issued in the Italian Social War ca. 90-79 B.C. (Syd. 633, 633a, 633b).

Frequently the Dioscuri are summarily represented by their characteristic attribute, namely their curious hats. Dioscuri piloi are depicted on several Sicilian issues that appear in Anson 4: Catana (432–34), Syracuse (435), Tyndaris (436–37); on a bronze coin of Lipara (431), a single pilos is shown without the star.

According to Cesano,²⁴ the spread of Dioscuri themes on coinage throughout the eastern Mediterranean was a result of the ascendancy of Roman influence in that area, which carried with it the cult of that city's favorite heroes. A different explanation is offered by Woodward with regard to the appearance of Dioscuri themes in Asia Minor. He believes that their appearance indicates a spread of Spartan settlement to this region.²⁵ In any event, the characteristic symbol of the starred piloi of the Dioscuri made its appearance in ca. 300 B.C. on a bronze coin



²³ Cic., Nat. D. 2.6, 3.11; Just., Epit. 20.3.8.

S. L. Cesano, "I Dioscuri sulle monete antiche," Bull. Comm. 55 (1927), pp. 102-37.

²⁵ A. M. Woodward, "Sparta and Asia Minor," in G. E. Mylonas and D. Raymond, eds., Studies Presented to David Moore Robinson 2 (St. Louis, 1953), pp. 868-83; G. W. Elderkin, "The Sarcophagus of Sidamara," Hesperia 8 (1939), p. 106; see also L. Robert, "Documents d'Asie Mineure," BCH 107 (1983), pp. 562-66.

of Colophon in Ionia (Anson 4, 444). In the third to the first centuries B.C. these symbols appeared on coins minted at sites scattered over a wide area, including Panticapaeum in Thrace (Anson 4, 438), Syros in the Aegean (Anson 4, 440–41), Seleucid Syria (Anson 4, 446–47 = BMCSyria, p. 95, 5; Plate 32, 2, ANS), Tripolis in Phoenicia (BMCPhoenicia, pp. cxvii, cxx, etc.), Dioscurias in the Cimmerian Bosporus (Anson 4, 442–43) and Paphlagonia (RGA 1.1, p. 164*, 6). By the second century B.C., the popularity of Dioscuri motifs had reached Persia (Le Rider, p. 340)²⁶ and the hellenistic kingdom of Bactria (BMCBactria, pp. 13–14, 6–18; p. 15, 19–30; pp. 16–17, 31–55; p. 18, 56–57).

On the silver tetradrachms and larger bronze pieces of Eucratides I of Bactria, the reverses have a lively portrayal of the Dioscuri on horseback holding long lances and palm branches (BMCBactria, pp. 13-14, 6-18; p. 17, 40-55). The palm branch is often associated with the Dioscuri; being an agonistic symbol²⁷ it alludes to their legendary triumphs.²⁸ These gallant youths are also shown bearing palm branches on the silver stater of the Bruttii of the third century B.C. (BMCItaly, p. 320, 8, and BM 1946-1-1-541; Plate 32, 3, ANS). A palm branch appears in association with the Dioscuri hats on a Roman Republican denarius of 89/8 B.C. (Syd. 690), on bronze pieces minted by Mithridates I at Ecbatana in 148/7-139/8 B.C. (Le Rider, p. 340) and by Herod's brother-in-law and fellow client king, Archelaus of Cappadocia (Anson 4, 463). Palm branches accompany each of the piloi on the drachms and certain of the bronze coins of Eucratides of Bactria and his successors (BMCBactria, p. 15, 19-30, etc.).

The Roman denarius of 89/8 B.C. mentioned above bears, in addition to the symbols of the Dioscuri, ship prows. This reminds us that the Dioscuri were also regarded as the protectors of mariners.²⁹ Piloi are also shown together with galleys on other coins of the Roman Republic



²⁶ G. Le Rider, Suse sous les Séleucids et les Parthes. Les trouvailles monétaires et l'histoire de la Ville, Mémoires de la Mission archéologique en Iran 38: Mission de Susiane (Paris, 1965); hereafter cited as Le Rider.

²⁷ Livy 10.47.3.

²⁸ Cesano (above, n. 24), p. 107; Albert (above, n. 22), p. 11.

²⁹ Albert (above, n. 22), pp. 54-66; WSM, pp. 219; A. B. Cook, Zeus 1 (Cambridge, 1914), pp. 764-66 and 771-72.

(Syd. 725, 725a, 727b, 1257, 1263). This type was also used by the Seleucid kings Antiochus VII (Anson 5, 953) and Alexander II (Anson 5, 954) and by the city of Tyre (*BMCPhoenicia*, p. 203, 15–17). Several later examples from Roman Imperial times are also listed in Anson.

The piloi of the Dioscuri are also depicted on coins in association with other symbols. Examples given in Anson 4 that predate the Christian era include: caduceus, 203 (Tabae, Caria); amphora, 450 (Tavium, Galatia); cornucopia, 451 (Panticapaeum, Thrace), 452 (Melos), 453 (Amaseia, Pontus), 454 (Amisus, Pontus), 455 (Sinope, Paphlagonia), 456 (Adramyteum, Mysia), 457–58 (Berenice II of Egypt); ear of corn and poppyhead, 445 (Synnada, Phrygia); and eagle, 459 (Deiotarus of Galatia), also *BMCEgypt*, pp. 69–70, 16–20 (Ptolemy V), and *SNGvAulock* 6237 (Tavium, Galatia). Usually a pair of piloi appears, but there are also instances where a single pilos is represesented, for example on a silver tetradrachm of Ptolemy V issued at Salamis (*BMCEgypt*, p. 70, 27) and on a second or first century B.C. bronze coin of Epiktetis in Phrygia (*SNGv Aulock* 8360).

The mixed coin types further emphasize the popularity of the Dioscuri and their emblems on the coins of Italy, Sicily and the territories that had been under the hegemony of Alexander the Great and the Diodochoi. An analysis of these coins shows that this theme, and in particular the depiction of the piloi, had its heyday between the second and first centuries B.C.

DISCUSSION OF THE SYMBOLISM ON HEROD'S COIN

Given this perspective, the representation of a pilos on a coin of Herod the Great is not altogether surprising, especially when one remembers that his coinage does not hesitate to draw on other pagan subjects: these others are briefly discussed in the Appendix. An identification of the main symbol on the coin with a Dioscuri pilos is strengthened by the inclusion of palm branches in the design. As we have seen, the palm branch was an emblem associated with the Dioscuri. The depiction of two palm branches may be merely an artistic contrivance to give sym-



metry to the composition, but it may also allude to the Dioscuri twins.²⁰ Two other items seen below the horizontal feature on which the pilos rests also belong if its interpretation is followed: they are the straps commonly represented with the piloi. But what are we to make of the presence of a couch?

A coin of the Seleucid king Demetrius I portrays a pair of piloi on thrones (Anson 4, 473 = BMCSeleucids, p. 49, 55 = Plate 32, 4). This prompts the question as to whether the couch on Herod's coin might not in fact represent a seat of honor of some kind. The existence of other clearer examples with the attributes of deities similarly represented makes this explanation more plausible.

Among the coin types catalogued by Anson there is in fact one showing the thunderbolt of Zeus resting on a cushion on a stool. It appears repeatedly on a long series of issues that were minted at Seleucia Pieria from the second century B.C. through the time of Septimius Severus in the second century A.D. (Anson 4, 568-78; 569 = BMCGalatia, p. 270, 16 = Plate 32, 5). On a coin of Diocaesarea in Cilicia struck in the reign of Philip II (244-247 A.D.) the thunderbolt is exhibited upright on an ornate throne (SNGvAulock 8669). On two series of Flavian coins struck by Titus and Domitian in 80-81 A.D. there appear draped chairs (sellae) on which rest different symbols, including a thunderbolt and a helmet, representing Jupiter and Minerva respectively (BMCRE 2, pp. 231-32, 49-56; p. 240, 97-103; p. 297, 1; p. 300, 8-9; p. 301, 15-16; p. 303, 26). See Plate 32, 6, ANS, and Plate 32, 7 = BMCRE 2, p. 240, 97, Titus.

Curiously, the same convention is encountered in the nearly contemporary art of India. Thus, we find on a frieze from the Great Stupa at Amaravati produced by the Satavahanas (ca. 140 A.D.), the Buddha being symbolized by a pair of footprints on a throne.³² From about the same period, we find the Kushans depicting the worship of the Buddha



³⁰ The combination of a pilos with two palm branches on this coin may be contrasted with the pair of piloi and single palm shown on the contemporary coin of Archelaus of Cappadocia (Anson 4, 463).

³¹ For an explanation of these Flavian coin types, see L. R. Taylor, "The Sellisternium and the Theatrical *Pompa*," *Classical Philology* 30 (1935), pp. 122–30; also A.L. Abaecherli, "Imperial Symbols on Certain Flavian Coins," *Classical Philology* 30 (1935), pp. 131–40.

³² R. C. Craven, A Concise History of Indian Art (London, 1976), ill. 45.

Sakyamuni's alms bowl on a carving from Shotorak.³³ Here the bowl is shown mounted on a seat provided with a cushion and drapings. Undoubtedly, the throne or chair is used as a device denoting respect and veneration. A link between hellenistic culture and the Kushan Empire is well established but there are insufficient grounds for demonstrating any cross-influence in regard to this particular symbolism.

The fact that Herod's coin shows a couch rather than any other kind of seat suggests that the design might have a more specific religious or historical significance. To be sure, the couch, or kline, had a cultic association. This link was the theoxenia ($\theta \varepsilon o \chi \varepsilon \nu \iota a$), a ritual feast celebrated in the "presence of the gods" who were being honored.34 The deities were represented at the ceremonial meal by their statues, or perhaps by their appropriate symbols, placed on a couch for the occasion. Pindar wrote an ode for just such a feast held at Acragas in Sicily in 476 B.C. at which the Dioscuri and Helen were feted. The Romans adopted this Greek rite, which they celebrated as the lectisternium.³⁶ At their version of the ceremonial feast, the place of honor was likewise occupied by couches, called pulvinaria, supporting symbols of the deities, referred to as exuviae.³⁷ From Festus we learn that a pulvinar featured in the ceremonial of the Dioscuri cult at Tusculum, although there is no evidence for a similar practice at Rome.³⁸ A couch for a lectisternium is depicted on a late Imperial coin of Nicomedia in Bithynia (Anson 1, 1340). It is to be noted that this couch has conspicuous finials, fashioned to



³³ J. M. Rosenfield, The Dynastic Arts of the Kushans (Berkeley and Los Angeles, 1967), fig. 103.

³⁴ See RE 5A.2, s.v. "theoxenia," cols. 2256-58 (Pfister).

 $^{^{35}}$ Pind., Ol. 3. Mention of a theoxenia of the Dioscuri is also to be found in Eur., Helen 1667-70. These and other references are given in RE 5.1, s.v. "Dioskuren," cols. 1109-10 (Bethe). The prominence of the theoxenia ritual in the Dioscuri cult is discussed by M. Giangiulio, "Locri, Sparta, Crotone e le tradizione leggendarie inttorno alla battaglia della Sagra," MEFRA 95 (1983), pp. 480-82.

³⁶ RE 12.1, s.v. "lectisternium," cols. 1108-15 (Wissowa); also DarSag 3.2, s.v. "lectisternium," pp. 1006-12 (Bouché-Leclercq).

³⁷ RE 23.2, s.v. "pulvinar," cols. 1977-78 (Hug). See also A. K. Lake, "The Supplicatio and Graecus Ritus," in R. P. Casey, S. Lake and A. K. Lake, eds., Quantulacumque: Studies Presented to Kirsopp Lake (London, 1937), pp. 246-47.

³⁸ Festus, p. 313 M; see Wissowa (above, n. 20), p. 269.

resemble the head and neck of an animal. It supports not the statue of a deity but rather two wreaths and some palm fronds.³⁹

To find a parallel depiction of a theoxenia or lectisternium of the Dioscuri, we have to turn from the coins to pottery and sculpture. An Athenian lekythos dating from the fifth century B.C., from Kamiros in Rhodes and now in the British Museum, shows two horsemen above either a couch or a table.⁴⁰ Other Greek vases depicting this subject are also known.⁴¹ Among the impressive quantity of votive tablets to the Dioscuri from Tarentum, a significant proportion show scenes of the theoxenia.⁴² Among the attributes of the Dioscuri represented on these fourth to third century B.C. tablets are a star and palm branch, but not the pilos. However, in the Cairo Museum there is a small stone carving of two piloi on a draped couch. Although lacking terminal posts or fulcra, the furnishing represented must surely be a couch because a female figure is shown sitting on it.⁴³ It would follow that this piece too represented a ritual feast of the Dioscuri.

On the face of it, there would appear to be little connection between Herod, king of Judaea, and a pagan ceremony paying homage to the Dioscuri. A pointer to a possible solution to this puzzle may be found in a hypothesis put forward by Kanael.⁴⁴ Kanael analysed the letters L



³⁹ Anson 1, p. 136.

⁴⁰ BM, B 633; see Richter (above, n. 13), p. 63. The scene on this lekythos is reproduced in Roscher, *GRM* 1, s.v. "Dioskuren," cols. 1169-70. It is described in J.D. Beazley, *Attic Red-Figure Vase-Painters* 2, 2nd ed. (Oxford, 1963), p. 1615.

⁴¹ See Beazley (above, n. 40), p. 1049, 53, and p. 1187, 36; also, F. Brommer, Vasenlisten zur griechischen Heldensage, 3rd ed. (Marburg, 1973), p. 512.

⁴² L. Pirzio Biroli Stefanelli, "Tabelle fittili tarantine relative al culto dei Dioscuri," *Archeologia Classica* 29 (1977), pp. 310-98.

⁴³ C. C. Edgar, Greek Sculpture: Catalogue général des Antiquités Égyptiennes du Musée du Caire (Cairo, 1903), p. 72, 27.502 and pl. 11. This item is described in the catalogue: "A female figure, enveloped in chiton and mantle, is seated in the middle of a couch, her feet on a footstool, her right hand on her lap. On either side of the couch, upon a rectangular plinth, stands a large conical cap encircled by a wreath. The couch has moulded legs and hangings in front." See also Chapouthier (above, n. 17), p. 48, 25. He also discusses (pp. 132-34) the representation of the theoxenia in Greek art.

⁴⁴ B. Kanael, "The Coins of King Herod of the Third Year," Jewish Quarterly Review 42 (1952), pp. 261-64.

and monogram + which appear on several of Herod's coins, including the one under discussion. He concluded that both these symbols stand for "year three." This Kanael saw as referring to the momentous third year of Herod's official reign, i.e. 38/7 B.C., when he triumphed over his Hasmonaean rival, Mattathias Antigonus, and took possession of his kingdom. Extending Kanael's argument, we might also expect to see pictorial allusions to Herod's proud victory. Here there are grounds for an association with the Dioscuri for, as has been pointed out, these legendary horsemen enjoyed the status of archetypal heroes of battle. A further clue is furnished by the tradition of the events leading up to the battle of the Sagra, as recorded by Diodorus Siculus: 47

The Locrians sent to Sparta asking her aid in War. The Lace-daemonians, however, hearing of the great military strength of the inhabitants of Croton, replied, as if responding in a perfunctory manner, as though the Locrians could be saved only in the way they suggested, that they were giving the Locrians for allies the sons of Tyndareus (i.e. Castor and Polydeuces). And the ambassadors, whether under the guidance of the providence of God or because they took the reply as an omen, accepted the aid they proffered, and after they had received favourable signs in a sacrifice, they prepared a couch (kline) on their ship for the Dioscuri and sailed back to their native land. 48

This account contains two points that are relevant to this discussion. First, the Dioscuri did not appear out of the blue at the battle of the



⁴⁵ For other interpretations of the monogram $\stackrel{?}{+}$, see Meyshan (above, n. 2), pp. 112–14, M. Krupp and Sh. Qedar, "The Cross on the Coins of King Herod," INJ 5 (1981), pp. 17–18, and most recently Meshorer, p. 10.

⁴⁶ While M. Narkiss, "Notes on the Coins of the Herodian Dynasty," Journal of the Jewish Palestine Exploration Society 4 (1934), pp. 8–14, and Meshorer, pp. 9–10, accept that the letters
☐ signify "year three" they do not support Kanael's supposition that this refers to 38/7 B.C.

⁴⁷ Diod. Sic. 8.32.

⁴⁸ Diodorus Siculus 3, trans. C. H. Oldfather (London and Cambridge, Mass., 1939), p. 425. The same episode is also described in Just., *Epit.* 20.2.11-14, where the word pulvinar stands in place of the Greek kline. For the origin of this heroic legend, see Giangiulio (above, n. 35), pp. 473-521.

Sagra but were literally shipped to Italy from Sparta, borne on a couch. This journey presages the Locrian victory and the images of the Dioscuri placed on the couch therefore symbolize that event. Here there is no direct reference to a theoxenia and the couch is seen essentially as the base of a portable shrine.⁴⁹

Another important detail of this episode is that for all the irony implicit in the traditional story, it is nonetheless emphasized that the Locrians owed their good fortune to the Spartans who advised them to seek the support of the Dioscuri. As is well known, Sparta was a principal center of the Dioscuri cult and, judging by the primitive form of their shrine there, 50 they were venerated in that city from a very early date.

The Lacedaemonian connection would have had significance as far as Herod was concerned. There was a tradition (which presumably originated among Jewish circles with pro-hellenic leanings in the third century B.C.) that the Jews and Spartans shared a common descent from Abraham.⁵¹ As an Idumaean and therefore from the stock of Abraham via Esau, Herod could also boast this reputed blood tie: he was evidently mindful of this tradition when he accorded C. Julius Eurycles, the dynast of Sparta, a warm welcome to his realm.⁵²

More tangible evidence for the commemoration and even possibly a cult of the Dioscuri in Herod's kingdom is provided by a pair of stone reliefs unearthed at Samaria in 1931, each featuring a laureate pilos sur-



⁴⁹ This is to be compared with the use of thrones to carry the images of the twelve gods into the theater during the fateful wedding celebrations staged by Philip of Macedon for his daughter at Aegae (Diod. Sic. 16.92.5) and also with the Roman custom of carrying chairs of the gods into the theater at ludi scaenici. See Taylor (above, n. 31). Festus' reference to the pulvinar at Tusculum (above, n. 38) appears to be in a similar context.

⁵⁰ The dokana ($\delta \acute{o} \varkappa \tilde{a} \nu a$), described in Plut., De frat. amor. 478a; see Elderkin and Woodward (above, n. 25).

⁵¹ For a recent bibliography on the ancient sources and modern literature dealing with this tradition, see M. Stern, *Greek and Latin Authors on Jews and Judaism* 1 (Jerusalem, 1974), p. 535. See also M. Hengel, *Jews, Greeks and Barbarians*, trans. J. Bowden (London, 1980), pp. 57, 105–6 and 116–17.

⁵² Joseph., BJ 1.515; see D. C. Braund, Rome and the Friendly King (London, Canberra, and New York, 1984), p. 77 and n. 11.

mounted by a star.⁵³ These reliefs were found in the filling under the stylobate of a third century A.D. temple to the Kore, among blocks of masonry showing detail of an unmistakable Herodian character.

In conclusion, a coin design featuring a pilos on a couch flanked by palm branches would have brought to mind the Dioscuri and their decisive role in a series of historic victories, culminating in the success of Rome and also, by implication, of Herod.⁵⁴ But this train of glorious events was set in motion by the Lacedaemonians, the kinsmen of Israel and Idumaea. A symbol capable of conjuring up this wealth of associations was an appropriate one for Herod, a king who prided himself on being closer to the Hellenes than to his Jewish subjects,⁵⁵ to depict on his largest coin.

APPENDIX

Emblems of Greek deities are to be found on at least five of Herod's coins, including the one discussed above. The rest carry neutral designs such as a ship or a diadem, although these are again representative of contemporary or earlier coin types used by the various hellenistic and

- 53 J. W. Crowfoot, "Excavations at Samaria, 1931," Palestine Exploration Fund Quarterly Statement 64 (1932), p. 23 and pl. 7, fig. 10; also J. W. Crowfoot, K. M. Kenyon and E. L. Sukenik, in Samaria-Sebaste: 1. The Buildings at Samaria (London, 1942), pp. 64-66.
- ⁵⁴ Besides the battle of Lake Regillus, the Dioscuri were reputed to have intervened on behalf of the Romans at two other important battles, at Pydna against Perseus of Macedon in 168 B.C. (Cic., *Nat. D.* 2.6, 3.11; Val. Max. 1.8.1) and at Campi Raudii against the Cimbri in 101 B.C. (Florus 1.38.19–21).
- as recorded by Josephus, are catalogued in E. M. Smallwood, The Jews under Roman Rule, from Pompey to Diocletian, 2nd ed. (Leiden, 1981), pp. 77-84. These include his founding of the cities of Sebaste and Caesarea on the hellenistic model and the establishment there of the imperial cult, benefactions to Greek cities including the rebuilding of the temple of the Pythean Apollo at Rhodes, endowments toward the gymnasiarchies of Cos and other cities, and this patronage of the Olympic Games for which he received the title of life president. We are reminded that even in the Jewish heartland, in Jerusalem and Jericho, Herod established hippodromes and amphitheaters and, in addition, a theater in the Holy City, where he also instituted a quadrennial festival with athletic and musical contests, and spectacles involving wild beasts.



Roman minting authorities.⁵⁶ Even the inscriptions appearing on Herod's coins are solely in Greek, in contradistinction with those issued by his Hasmonaean predecessors where Hebrew legends predominate. Other than the fact that they include no human likeness, these coins cannot be said to reflect Jewish religious sentiments in any way. Besides the Dioscuri, seven other obvious pagan symbols appear on Herod's coins.

Tripod with Lebes. BMCPalestine, pp. 220-21, 1-10; Meshorer, p. 235, 1, 1a-c (obverse); Plate 32, 1, ANS.

The tripod with lebes refers to the cult of Apollo.⁵⁷ Frequently, it accompanies a portrait of this deity on the coins. The tripod both with and without Apollo was especially popular as a coin type in hellenic areas, including southern Italy and Sicily (Anson 1, 948–1192). Apollo and his attributes occur regularly on the coins of the Seleucid kings. On several Seleucid issues, Apollo is represented alongside the tripod (ESM and WSM, various examples). The constant use of this subject by the Seleucids advertised the claim of the royal house to be descended from Apollo.⁵⁸ By comparison, the tripod is fairly infrequent on Roman coins.⁵⁹ It seems likely, therefore, that the designer of Herod's coin used as his model Seleucid pieces, perhaps those which had circulated in Judaea. A parallel may be found further east in Elymais where favor-



⁵⁶ The second largest of Herod's coin denominations, showing a crested helmet on the obverse and a Macedonian shield on the reverse (*BMCPalestine*, p. 221, 11–13; Meshorer, p. 235, 2, 2a–b), appears to be based on a design that dominated Macedonian bronzes for over a century from ca. 300 B.C. (see e.g. *SNGCopMacedonia* 1118–37, 1181–83, 1222–29, 1253). Usually, the helmet is shown with symmetrical plumes and twin cheek pieces. This type was emulated on a bronze lepton of Herod Archelaus (*BMCPalestine*, pp. 232–33, 10–15; Meshorer, p. 241, 6 a-f). However, at least one of the Macedonian issues shows the helmet in side view with only a single cheek piece visible as on Herod's coin (*SNGCopMacedonia* 1253).

⁵⁷ Following Watzinger (above, n. 4), p. 24, E. R. Goodenough, *Jewish Symbols in the Greco-Roman Period* 1 (New York, 1953), p. 274, Kanael (above, n. 5), p. 48, and others.

⁵⁸ See e.g. C. Préaux, Le Monde Hellénistique (Paris, 1978), p. 240 and n. 2; cf. R. A. Hadley, "Royal Propaganda of Seleucus I and Lysimachus," JHS 94 (1974), p. 58.

⁵⁹ This type accounts for only 11 out of the 1369 Roman Republican coins listed in Sydenham. Meshorer is therefore surely unjustified in his claim that Herod's die designers derived the tripod motif from Roman Republican coins (Meshorer, p. 19).

ite Seleucid designs, including the tripod with lebes and images of Apollo continued to appear on the coins for some decades after Seleucid rule had ceased there (Le Rider, p. 75, 85; p. 76, 87; p. 79, 97; p. 85, 115; p. 87, 126; p. 88, 127).

Winged Caduceus. BMCPalestine, pp. 221-22, 14-17; Meshorer, p. 235, 3-4 (obverse).

The caduceus is the distinctive emblem of Hermes/Mercury⁶⁰ and was widely used on Greek and Roman coins alike. Sometimes the bust of Hermes/Mercury appears on the alternate side of these pieces. The caduceus is shown either with wings or without. The use of this symbol on Herod's coinage may possibly be linked with the promotion of the cult of Mercury at Rome and the campaign to project the emperor Augustus, Herod's patron, as the living embodiment of the messenger god.⁶¹ Hermes' wand is not to be confused with the staff wound with a coiled serpent belonging to Asklepios, which is also represented on ancient coinage, notably on issues minted at Cos (Anson 4, 474–91).⁶²

Poppyhead. BMCPalestine, pp. 221-22, 14-17; Meshorer, p. 235, 3-4 (reverse).

The poppy is usually depicted on coins together with ears of wheat or barley (Anson 3, 1063–67). In this context, it clearly symbolizes the cult of Ceres/Demeter. Many cult statues of this goddess show her holding these agricultural attributes.⁶³ Meshorer connects the use of a poppyhead on the Herodian coin with the important cult of Ceres and her daughter Kore at Samaria, where he suggests all Herod's dated coins, including this one, were minted.⁶⁴



⁶⁰ Again following Watzinger, Goodenough and Kanael (above, n. 57). On the wand of Hermes, see RE 3.1, s.v. "caduceus," cols. 1170–71 (Samter).

⁶¹ The relationship between the Emperor Augustus and the cult of Mercury is analysed in B. C. Farnoux, "Mercure romain, les 'Mercuriales' et l'institution du culte impériale sous le Principat augustéen," Aufstieg und Niedergang der römischen Well 17.1 (1981), pp. 457-501.

⁶² This mistake appears in Y. Meshorer, "Jewish Symbols on Roman Coins Struck in Eretz Isreal," *Israel Museum News* 14 (1978), p. 63.

⁶³ See RE 15.2, s.v. "mohn," col. 2445 (Steier).

⁶⁴ Meshorer, pp. 19-22.

Palm Branch and Fillet. BMCPalestine, p. 222, 18-19; Meshorer p. 235, 5-6 (reverse).

This device was correctly identified by Meshorer in his 1982 catalogue of Jewish coins. The palm branch with ribbons attached to it was a Greek victory symbol and as such was often associated with Athena. Newell describes a stater of Antiochus II showing Athena holding a palm branch adorned with hanging fillets in her left hand and the winged Nike in her right (WSM 1497). He also cites two tetradrachm issues, struck by Antiochus II and Antiochus III respectively (WSM 1499 and 834), which include this symbol. The palm branch with fillet was taken up by the Romans and appears on a late Republican coin (Syd. 938). It also appears independently as a coin type on a bronze issue of Herod's brother-in-law, Archelaus of Cappadocia, illustrated by Sydenham. As this symbol is employed on one of Herod's dated coins of "year three," it may, like the Dioscuri motif, commemorate his overthrow of Antigonus in 37 B.C.67

Anchor. BMCPalestine, pp. 224–26, 40–65, p. 227, 75–77; Meshorer, p. 237, 17, 17a-m, p. 238, 22, 22a-b (obverse). BMCPalestine, p. 226, 66–69; Meshorer, p. 237, 18; p. 238, 18a, 19, 19a, 20, 20a, 21 (reverse).

The anchor reproduced on these coins is not to be seen simply as a maritime symbol, but also as a major emblem of the Seleucid dynasty:⁶⁸ their inverted anchor constitutes one of their most popular coin types. Appian says that an anchor was engraved on the signet ring worn by



⁶⁵ Meshorer, p. 20.

⁶⁶ WSM, p. 69; also Klimowsky (above, n. 4), p. 89.

⁶⁷ E. T. Sydenham, The Coinage of Caesarea in Cappadocia (London, 1933), nos. 19–20. The filleted palm branch and Dioscuri pilos are among the emblems that were prominently displayed on marble plaques on the walls of a hall used for a hero cult at Pergamon in the Augustan period. See W. Radt, "Pergamon, Grabungskampagne im Herbst 1973," AA 89 (1974), pp. 273–84 and fig. 12; and "Pergamon, Vorbericht Herbstkampagne 1974," AA 90 (1975), pp. 356–68 and fig. 10.

⁶⁸ Appian, Syr. 56; Just., Epit. 15.4. See Préaux (above, n. 58) and, more recently, T. Fischer, Silber aus dem Grab Davids? Jüdisches und Hellenistisches auf Münzen des Seleukidenkönigs Antiochos' VII (Bochum, 1983), p. 10, n. 6.

Seleucus I, which was reputedly a gift from Apollo. The Hasmonaean king Alexander Jannaeus appropriated this symbol on certain of his coins (BMCPalestine, pp. 198-99, 1-10, pp. 207-9, 61-88 and pp. 210-11, 1-18; Meshorer, vol. 1, pp. 118-23, series A, C and D). This may reflect his wish to assert the legitimacy of his authority in a former Seleucid territory. In this connection, it may be pointed out that contemporaneous princes who had succeeded to former Seleucid domains elsewhere also employed the inverted anchor on their coins, namely Hyspaosines of Characene, Kambaskires I of Elymais and Mithridates II of Parthia. As the anchor on Herod's coin is very similar in form to those depicted on Jannaeus' pieces, he may also have used this symbol to emphasize the legitimacy of his rule.

Cornucopiae with Caduceus. BMCPalestine, pp. 224-26, 40-65; Meshorer, p. 237, 17, 17a-m (reverse).

The cornucopia is a symbol that is frequently depicted alone (e.g. on the obverse of Herod's eagle coin; see below), but it is often associated with the goddess Tyche, or Fortuna, on both sculpture and coins.⁷² Occasionally the horn of plenty is borne by other deities such as Demeter. Goodenough pointed out that because the cornucopia had, by late hellenistic times, lost its association with a specific deity, it was merely seen to represent "the prosperity which divine rule (or the divine king)



⁶⁹ That the anchor on the coins of Alexander Jannaeus was meant to be seen upside down like those on the Seleucid coins was demonstrated by A. Kindler, "Addendum to the Dated Coins of Alexander Jannaeus," *IEJ* 18 (1968), pp. 188-91; also Meshorer, vol. 1 (above, n. 14), pp. 79-80. On the derivation of the anchors reproduced on the bronze coins of the Hasmonaean king from those on Seleucid issues, see also M. D. Mc Lean, "The Initial Coinage of Alexander Jannaeus," *ANSMN* 26 (1981), pp. 154-55.

⁷⁰ For the anchor coins of Hyspaosines of Characene, Kamnaskires I of Elymais and Mithradates of Parthia, see respectively E. T. Newell, "Mithradates of Parthia and Hyspaosines of Characene," *ANSNNM* 26 (1925), pp. 1-18; Le Rider, p. 76, 86, pp. 357-58, pp. 86-87, 122, p. 88, 128, and pp. 389-91.

⁷¹ See Meshorer, p. 26.

⁷² See DarSag 1.2, s.v. "cornucopiae," pp. 1514-20 (Pottier); RE 7A.2, s.v. "Tyche," cols. 1682-89 (Herzog-Hauser); I. Kajanto, "Fortuna," Aufstieg und Niedergang der römischen Well 17.1 (1981), pp. 518-19 and 530.

brought to men."⁷⁸ This opinion would appear to be borne out by the regular employment of the crossed pair of cornucopiae with a pomegranate in the middle on the coins of the Hasmonaean kings, which makes this emblem tantamount to their heraldic device.⁷⁴ The precedent for the crossed cornucopiae with the caduceus on Herod's issues, however, is the reverse design on a denarius of Antony struck in Asia Minor in 40 B.C. (Syd 1189). These items are evidently meant to be read as the emblems of Fortuna and Mercury conjoined, since the cults of these two deities were often linked together.⁷⁵ To that extent, the cornucopiae and caduceus on the Herodian coins may be seen as an overt display of pagan symbolism.⁷⁶

Eagle. BMCPalestine, p. 227, 70-74; Meshorer, p. 238, 23, 23a-c (reverse).

Goodenough observed that the eagle had an allegorical meaning in Jewish tradition that is anchored in the Bible and Apocrypha.⁷⁷ However, its employment on Greek and Roman coins is usually as the emblem of Zeus.⁷⁸ The eagle featured prominently on the coinage of



⁷⁸ E. R. Goodenough, Jewish Symbols in the Greco-Roman Period 8 (New York, 1958), pp. 106-14.

⁷⁴ Meshorer, vol. 1, pp. 67-68. The origins and the spread of the double, or crossed, cornucopiae design to Hasmonaean coinage has been traced by D. Barag and Sh. Oedar in "The Beginning of Hasmonaean Coinage," *INJ* 4 (1980), pp. 15-17.

⁷⁵ See RE 7.1, s.v. "Fortuna," col. 40 (Otto). The crossed cornucopiae and caduceus motif has also been noted on a Roman altar from Italy by E. Samter, "Mercur und Minerva," MDAI(Röm) 10 (1895), pp. 93–94. For a more detailed discussion of this altar and the symbols represented on it, see K. Lehmann-Hartleben, "Ein Altar in Bologna," MDAI(Röm) 42 (1927), pp. 163–76.

⁷⁶ The double cornucopiae and caduceus is a type also found among the autonomous issues of Ascalon of the same period (BMCPalestine, p. 111, 45). It also occurs on several later coins minted in Rome (BMCRE 1, p. 133, 95–97), Commagene (BMCRE 1, pp. 144–45, 174–76), Judaea (BMCPalestine, p. 252, 10–15; Meshorer, p. 282, 10, 10a-b, 11), Mauretania (J. Mazard, Corpus Nummorum Numidiae Mauretaniaeque [Paris, 1955], 484–86), etc.

⁷⁷ Goodenough 8 (above, n. 73), pp. 135-39.

⁷⁸ See *RE* 1.1, s.v. "adler," cols. 373-74 (Oder).

Alexander the Great and his successors who claimed descent from the Macedonian kings, Zeus being regarded as an illustrious ancestor of theirs. His attributes, the eagle and thunderbolt, constitute a standard coin motif of the Ptolemies, while a bearded portrait of the chief Olympian god commonly appears on the reverse of their bronze pieces. This association may have aggravated Jewish resentment when Herod attempted to erect a golden eagle above the great gate of the Temple.79

⁷⁹ Joseph., BJ 1.650-653 and AJ 17.151-152. See Josephus 2, trans. H. St. J. Thackeray (London and Cambridge, Mass., 1927) pp. 308-9, n. a. Many scholars, including Kanael (above, n. 5, p. 50), link the striking of Herod's eagle coin with this incident. Goodenough, who maintained that the eagle had long been assimilated into Jewish iconography, found unacceptable the idea that the installation of the ornamental image above the Temple portal was the true cause of the disturbance. See Goodenough 8 (above, n. 73), pp. 123-25.

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AN AUGEAN STABLES COIN TYPE FROM NICAEA

RICHARD D. WEIGEL

The story of Herakles cleaning the Augean stables by diverting local streams through the cattleyard of the king of Elis is different in nature from his other great labors and is certainly difficult to represent through the visual arts.¹

Reinhold Bräuer lists only three cities which included an Augean stables type in their Labors of Hercules series of coins—Alexandria, Hadrianopolis, and Heraclea Pontica.² Aline A. Boyce published a

¹ The labor is related in Apollodorus 2, 5, 4-5; Diodorus Siculus 4, 13, 3; and Pausanias 5, 1, 9-10. See also Daremberg-Saglio, *Dictionnaire* 3.1, 90; Roscher, *Lexicon* 1, 1, 2229, 2244; and Seth W. Stevenson, *A Dictionary of Roman Coins* (London, 1889), pp. 451-52.

and plates 2-5. See especially pp. 67-69 on the Augean stables and the list on pp. 110-12. The Labors series of Postumus also includes an Augean stables coin (RIC 5, pt. 2, p. 365, 350). See Stevenson (above, n. 1); K. Regling, "Herculestaten auf Münzen des Postumus," Amtliche Berichte aus den Preuzisschen Kunstsammlungen 40 (1919), pp. 275-81, and P. Bastien, "Les travaux d'Hercule dans le monnayage de Postume," RN 1958, pp. 59-78, especially p. 65 and pl. 5, 24, on this type. For the Alexandria coin, see C. Carlson, "Rarities 4—The Labors of Hercules Series," SAN 4 (1972-73), pp. 63-66, D.2606. I would like to thank the American Numismatic Society for providing plaster casts of this coin. The Heraklea Pontica type can be seen in Waddington (pl. 60, 8, and pl. 62, 18). It should also be noted that Phaistos in Crete issued a stater in the late fourth century B.C. which may be the earliest numismatic reference to the Augean stables myth. It shows Herakles seated, presumably resting after one of his labors. The mattock is not included, but the presence of an amphora by his







fourth such coin, from the mint of Perinthus in Thrace.³ Another mint, Nicaea in Bithynia, with a different artistic representation of the theme, can now be included in the list.

- Obv. [ΛCΕΠ]TIM ΓΕΤΑC KAI Head of Geta r.; to l., countermark; above, Nike standing r.
- Rev. NIKAΙΕΩΝ Herakles standing r., swinging mattock; to r., released water; to l., jar or basket; between legs S.
- Æ, 9.58 g, 27 mm, R. Weigel coll.

This new type shows Herakles in a much more aggressive pose than the ones he takes on the other known Augean stables coins. He is truly laboring in the act of swinging the tool with force to open up a pathway for the water. The river is represented by wavy lines on the right. The object shown at left is similar to the jars or baskets included in other artistic treatments of the labor.⁴ Here it appears to be a jar representing water or specifically the diverted streams. It could also be a basket used to collect debris from the labor.

The active posture of Herakles striking with the tool is more closely related to the Augean stables scenes on the Liria mosaic and the relief

side is a strong indication that he has just completed the cleaning of the Augean stables. See *BMCCrete*, p. 63, 14, and plate 15, 7.

- ³ Aline A. Boyce, "A New Heracles Type from the Mint of Perinthus," ANSMN 4 (1950), pp. 73-77.
- ⁴ For representations of the theme in media other than coins see F. Brommer, Herakles: Die zwölf Taten des Helden in antiker Kunst und Literatur (Münster/Köln, 1953), esp. pp. 28-29; R. Flacelière and R. Devambez, Héraclès: images et recits Paris, 1966), esp. pp. 90-92; Doreen C. Spitzer, "Roman Relief Bowls from Corinth," Hesperia 11 (1942), pp. 162-92, esp. pp. 166-69. See Boyce (above, n. 3), p. 75, n. 6, for additional bibliography.



bowl from Corinth than it is to the other numismatic representations. The coins of Alexandria, Hadrianopolis, Heraclea Pontica, and Postumus all rely essentially on the tool Herakles is carrying for identification of the labor. Alexandria does include the important element of water, but the scene appears to show the hero washing his hands after the job had been completed. Boyce's Perinthus type portrays Herakles at least lifting the mattock, but he seems to be uninspired and disinterested. The Nicaea coin depicts most graphically the physical labor involved and also includes the rivers which, after all, played a crucial role in completing the work.

The new coin type complements other Labors of Herakles issues from Nicaea, particularly those struck under the Severan family, including Geta. It also makes Boyce sound prophetic when she comments that the four cities known to her to have struck the rare Augean stables type "along with Nicaea in Bithynia" constituted the cities which had also commemorated the greatest variety of labors on their coins. Nicaea can now join the others as a true member of that group.

⁵ Boyce (above, n. 3), pp. 76-77.

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(PLATES 33-36)

LIONEL HOLLAND

Published material concerning Islamic bronze weights is very scanty. References to the available literature can be found in three articles by the late Paul Balog.¹ Although (according to Balog) Islamic bronze weights are to be found—in Egypt at least—in reasonable abundance, not many of them seem to have reached museums or serious collectors. The material available for study is meager and usually of uncertain provenance. Consequently, the investigation of these objects has so far been confined to the decipherment of inscriptions and the description of forms.

The assemblage of weights in the Appendix has two particularly interesting features: first, all the weights are from the same site; and second, it is a much larger group than any hitherto described. This makes it possible to establish a number of facts about the units involved, their multiples and subdivisions. The present paper is concerned chiefly with the information to be derived from the physical examination of the

¹ P. Balog, "Islamic Bronze Weights from Egypt," JESHO 13 (1970), pp. 233-56, hereafter cited as Balog (a); "Pesi di Bronzo Islamici del XIII Secolo," Num. e Antich. Classiche (1973), pp. 179-87, hereafter Balog (b); "Contributions to the Arabic Metrology and Coinage," Annali dell' Istituto Italiano de Numismatica (Rome, 1980-81), pp. 115-54, pl. 9-14, hereafter Balog (c). Part 1 of this last essay describes glass and bronze weights in the Kadman Museum, Tel Aviv. Many of them are of the same types as those described here.



weights; the decipherment and interpretation of the inscriptions is a task yet to be undertaken.

THE SITE

The ruins of Caesarea Maritima lie on Israel's Mediterranean shore, about 40 km south of Haifa. The city was founded at the end of the first century B.C. by Herod I, king of the Jews. He named it after his patron, Augustus Caesar. Under Roman and Byzantine rule it was an important seaport and a provincial capital.

In A.D. 635-36, Syria and Palestine fell to the armies of Islam. Caesarea lost its status as a capital city and was relegated to being one among many similar provincial towns. As such, it seems to have enjoyed considerable prosperity: Arab writers of the tenth and eleventh centuries remark on the excellence of its farms and orchards, the strength of its wall, and the large number of its inhabitants.²

About the year 878 Palestine, including Caesarea, came under the control of the quasi-independent governor of Egypt, Ahmad b. Tulun. From then until the coming of the Crusaders, the country remained (except for a brief period at the close of the eleventh century) under the political control of the successive dynasties which ruled Egypt: Ṭūlūnids, Ikshidids and Fātimids.

In 1101 Caesarea was taken by the Crusaders, under whom it continued at first to flourish. The decline of the Crusader kingdom in the thirteenth century appears to have been paralleled by that of Caesarea. The geographer Yakut (ca. 1220) writes: "Caesarea was of old a fine, grand city... but now it is more like a village." ³ In 1265 Caesarea was destroyed by the Mamlūks. It was never rebuilt.

Today, a kibbutz adjoins the ancient site, with a hinterland of cultivated fields, orchards and sand dunes. Coins, weights and other small artifacts are to be found throughout the area. All the objects described here were random surface finds, picked up within 4 to 5 km of the city center.



² Nasr-i-Khusrau (a Persian), Muqaddasi, and Idrisi, quoted in G. Lestrange, Palestine under the Moslems (London, 1891), p. 474.

³ Lestrange (above, n. 2), p. 474.

DESCRIPTION OF PIECES

As a rule, only uncleaned pieces in good condition were selected for cataloguing; exceptions, however, were made to include cleaned pieces with features of special interest (e.g. an inscription, or an unusual shape, or an uncommon denomination). All cleaned weights are labeled cl. in the Appendix.

The weights are grouped according to their form and surface markings. Each group arrived at in this way comprises a subseries, made up of several denominations of either dirhams or dinars, never both together. The dirham series is based upon a unit of about 2.9 g. Its denominations are: 50, 20, 10, 5, 2, 1, 1/2, 1/3, 1/6, 1/12, and (possibly) 1/24. The second series, dinars, has a unit of about 4.15 g, in the following denominations: 10, 5, 2, 1, 1/2, 1/3, 1/6, 1/12, and 1/24. There are no serious inconsistencies in this pattern; only five small pieces do not readily fit into it.

In the accompanying list, the weights have first been grouped according to form and then arranged in subgroups according to mass. Within each subgroup (corresponding to a single form and denomination) the weights are listed in no particular order. A detailed description of the various forms follows.⁵

Polyhedra: Dirhams, 1-39

These are called by B. Kisch "faceted truncated spheres." The two polar facets are largest. Inscriptions, when present, are always on these. Otherwise, they are usually marked with a peripheral groove and a central dot; occasionally, they have a deep, smoothly curved indentation.

- ⁴ There can be no mistaking the magnitude of the units, since they are multiplied decimally and divided duodecimally.
- ⁵ G. M. M. Houben, *The Weighing of Money* (Zwolle, 1982), pp. 11-20, which was not available when this paper was written, includes practically all the forms of Islamic bronze weights described here with some interesting variants admirably described and illustrated. Dr. Houben tells me that his weights were acquired in a number of Middle Eastern countries, including Lebanon and Syria. This suggests that the forms, at least, of these bronze weights were common to a very large area of the Arab empire.
- ⁶ B. Kisch, Scales and Weights: A Historical Outline (New Haven and London, 1965), p. 97, fig. 52.



The remaining facets are arranged about the body of the weight in rings. In the list, the number of such rings and the number of facets in each ring—the latter always the same on any particular weight—are indicated thus: 5×12 , 3×8 , etc. Usually, each facet is punched with a "bird's-eye," a dot surrounded by one or more circular grooves.

I have classed as "polyhedra" (for want of a better term) a few pieces whose surface is divided somewhat after the manner of a peeled orange (5, 6, 17).

Polyhedra: Dinars, 40-52

In this series, the polar facets are much broader and the body of the weight greatly flattened. The only specimens to which any ambiguity attaches are 49-52, which might be either 1/2 dirham or 1/3 dinar.

Cubes: Dirhams, 53-58

Number 53 is of a form called by Kisch "cubo-octahedral." The others of this group are simple cubes, with each face usually decorated with a "bird's-eye."

Spheroids: Dirhams, 59-61

The surfaces of these are smoothly curved and punched all over with small, close-set "bird's-eyes" and are nearly spherical. Though none of this group have recognizable inscriptions qualifying them as Islamic, it seemed right to include them here on circumstantial grounds alone. Numbers 59–61 are in good condition and can readily be assigned denominations in the dirham series.

Spheroids: Dinars, 62-68

These pieces look like the previous spheroids except for one characteristic: they are strongly oblate. With the exception of 65 and 68, all are in poor condition (mainly as a result of inexpert cleaning) resulting in a large deviation from expected weight—up to 10%.



⁷ There is an obvious gap in this group: the one dinar piece is missing. No doubt a specimen will turn up eventually. Many denominations are represented in this list by only one or two pieces.

⁸ Kisch (above, n. 6), p. 97, fig. 53.

Barrels: Dirhams, 69-111

This form has been described and illustrated by several writers. The form long antedates the Arab empire; bronze barrel weights have been found at Pompeii. I have classed as "barrels" all those pieces whose ratio of maximum diameter to height is less than 3:2. These appear to be all in the dirham series but there are several borderline cases.

Discoids: Dinars, 112-226

The weights in this group are all flattened barrel shape, with a diameter to height ratio of 3:2 or more. In almost all cases the ratio is greater than 2:1. The polar faces are usually decorated with a punched peripheral groove and central dot. Some have inscriptions on one face. Two specimens have inscriptions on both faces. In a few cases, especially in the smaller denominations, both faces are completely blank.

Brick-Shaped Weights: Dirhams

The larger pieces are, as a rule, carefully shaped, in the form of two truncated, four-sided pyramids set base to base. The smaller weights are simply slabs cut from sheet metal. This group can be divided into four subgroups, according to surface markings (or the absence of them).

Unmarked Weights. Though quite numerous, these have not been included in this corpus. This may seem arbitrary, yet the admission of such pieces would qualify any unmarked, rectangular slab of bronze for inclusion.

"Bird's-Eye" Marked Weights, 227-300. The same number of "bird's-eyes" (from one to five, but usually one or two) always appears on each

- ⁹ W. M. F. Petrie, Naukratis (London, 1886), pt. 1, pp. 69-87, pls. 21-24, identifies a number of barrel shaped weights as multiples of the dirham. He claims to be the first to have done so. See also Balog, (a) and (b) above, and J. Forien de Rochesnard, Album des Poids d'Afrique (Antwerp, 1960), p. 206. The last gives sketches of multiple dirham weights of various sizes, and also of three greatly flattened pieces weighing 81, 83, and 210 g respectively; these are clearly 20- and 50-dinar weights.
- ¹⁰ F. G. Skinner, Weights and Measures: Their Ancient Origins and Their Development in Great Britain up to AD 1855 (London, 1967), fig. 11.



of both opposite faces, except for 305 and 376 below, which each have an inscription on one face.

Inscribed Weights, 301-550. The inscriptions (on these, and on all other forms of inscribed weights) have been punched with an engraved die and are, therefore, in relief on an incuse field.

Inscribed Weights with Punch Marks, 551-602. These are found in three denominations: three-sixths, two-sixths, and one-sixth dirham, and have the corresponding number of punch marks on the reverse. On many weights of this group (but not on all), the inscription is of a form not seen on other types: it is a small circle enclosing a star, a cross, or a dot, with the inscription around the periphery.

Weights 310 and 602 are marked with punch marks only. Numbers 521-23, 549, and 550 are anomalous with respect to weight. The first three of these might conceivably be assigned a value of 1/8 dirham; but this is so much at variance with the overall pattern, that it seems unlikely.

WEIGHTS

All the weights in the Appendix were individually inspected; heavily corroded or damaged pieces were excluded. Weights showing evidence of cleaning were also omitted, unless possessing features of special interest. Such weights, when listed, are marked cl. and have not been included in any of the calculations. All weights were water washed to remove mud and loose dirt, air-dried at room tempreature, solvent degreased, then oven dried under forced draft at 105° C for at least 60 minutes (this was found to be sufficient to give constant weight). Weighings were carried out on a Sartorius analytical balance reading to 0.1 mg. All weights exceeding 1 g were taken to four significant figures; weights of 1 g or less, to the nearest milligram. The tables used in statistical testing were from Fisher and Yates, Statistical Tables for Biological, Agricultural and Medical Research (Edinburgh, 1938).



¹¹ Lest this be thought an excess of caution, it is as well to point out that solvent degreasing (with methylene dichloride or similar material) of small weights causes a reduction in weight of as much as 2 mg: on a 200 mg weight, this would be 1%—a considerable change.

Table 1
Uncleaned Weights

Dinars

Units		Polyhedra			scoids	Spheroids			
	n	x	S	n	x	S	n	x	S
10	1	41.67		1	41.21				
5	4	20.80	.073	1	21.32				
2				8*	8.381	.086	1	8.477	
1				34	4.148	.081	1	4.263	
1/2	1	2.010		22	2.053	.034			
1/3	4 (?)	1.364 (?)		16	1.361	.035			
1/6				11	.671	.024			
1/12				5	.336	.015			
1/24				2	.167	.013			

Dirhams

Unit	3	Polyhe	dra		Cube	s		Sphero	ids		Barre	ls
	n	x	S	n	x	S	n	x	S	n	x	s
2 0	2	58.40								2	59.12	
10	8	28.64	.672							19	2 9. 2 2	.556
5	16	14.53	.176				2	14.49		19	14.57	.192
2				1	5.857		1	5.780		1	5.814	
1	2	2.895		1	2.782							
1/2				1	1.432							
1/3	1	.938		2	.948							

Dirhams: Bricks

Units	"Bire	ds-Eyes"		Ins	criptions		Punch Marks		
	n	x	s	n	$\bar{\mathbf{x}}$	s	n	x	s
2	12	5.818	.075	18	5.774	.098			
1	25	2.891	.038	44	2.875	.043			
1/2	5	1.441	.028	44	1.422	.040	17	1.411	.044
1/3	1	.960		20	.952	.024	17	.966	.058
1/6	22	.467	.032	62	.472	.015	10	.471	.021
1/12	3	.246	.030	24	.236	.017			

n = no. of specimens $\bar{x} = mean$ weight s = unbiased best estimate of population standard deviation, calculated from sample.



[•] No. 117 has been excluded. .

Table 1 summarizes the weights of the pieces in each series by shape and by denomination. In most cases, the fractions and the multiples are extremely close. For example, 12 times .246 g, the weight of the 1/12 dirham "bird's eyes," equals 2.952 g, only .061 g greater than the average of the dirham units in the series.

STANDARDS

Obviously these weights are not in the same condition as when they were in use. Before looking into the question of standards raised by the data in Table 1, we should first consider the changes which the weights may have undergone since they were made.

Metal objects exposed to the forces of nature undergo the simultaneous processes of diminution and accretion. The first includes both mechanical wear and chemical attack, with the formation of soluble compounds which are leached away. The second involves the formation of insoluble oxides and salts. These may, during deposition, also occlude particles of soil, sand, etc. Whether the net result of these processes is a gain or a loss in weight, depends on the nature of the object and on the conditions of exposure.¹²

All the weights dealt with here have undergone some degree of corrosion. Tests made on about 20 specimens indicate that non-metallic accretions amount, on the average, to a few percent of the total.¹³ At the same time, some loss by dissolution almost certainly occurred.

The net effect of these opposing processes becomes apparent as soon as we begin to examine the figures. In each subseries of weights of



¹⁸ Changes in the mass of weights and methods of estimating them are discussed by Petrie in Naukralis (above n. 9), in Ancient Weights and Measures (London, 1926), and in "The Study of Weights," Ancient Egypt 1935, pp. 146-47. For an up-to-date review of the subject of corrosion of ancient metals, see Z. Goffer, Archaeological Chemistry (New York, 1980), ch. 14.

¹³ The tests were carried out on unmarked, brick-shaped dirham weights of various sizes. The specimens were stripped by successive treatments with alkaline Rochelle salt and 10% sulphuric acid. Non-metallic accretions were assumed to account for 30% of the total measured loss, which would be the case if the corrosion products were assumed to consist roughly of two parts of malachite to one part of cuprite.

similar form, the value of the basic unit (dinar or dirham) calculated from the mean weight of each denomination, diminishes progressively down the scale of denominations. Let us consider further, for example, the group of brick-shaped, inscribed dirham weights.

TABLE 2

BRICK-SHAPED, INSCRIBED DIRHAM WEIGHTS

Uncleaned Specimens Only

Unit	No. of Specimen	s Mean Weight	Calculated Dirham
2	18	5.774 g	2.887 g
1	44	2.875	2.875
1/2	44	1.422	2.844
1/3	20	0.952	2.856
1/6	61	0.472	2.832
1/12	24	0.236	2.832
		Weighted Average	2.850

This pattern recurs in all the series of weights, with few anomalies (usually in the smaller groups). It shows that the net effect of corrosion on the pieces has been a reduction in weight. Corrosion being a surface phenomenon, the loss is proportionately greatest in those pieces which have the highest surface-to-volume ratio, i.e. the smallest denominations. If the net effect of corrosion had been a gain in weight, the smallest denominations would be proportionately the heaviest.



¹⁴ Corrosion is measured in terms of volume per unit of surface area: its units are one-dimensional (Goffer [above, n. 12], p. 253). The effect of diminishing size upon weight loss (or gain) by corrosion, is very simply illustrated by the case of a sphere of unit radius. Its volume is 4.189 and its area 12.56; its area to volume ratio is 3. If we reduce the sphere to half its original volume (and consequently to half its original weight as well), its volume will be 2.094, its radius $\sqrt[3]{.5} = .793$, its surface area 7.898 and its area to volume ratio now 3.77. In two metal spheres of these relative sizes, both corroded to the same degree, the proportionate loss (or gain) in mass of the smaller sphere will be 26% greater. The divergence becomes smaller, as objects depart further from a spherical shape and become flatter.

The effects of corrosion have important practical consequences. In the first place, the variability within the groups themselves must be greater than it was originally, since no two weights will have been affected by corrosion in exactly the same way. This will tend to obscure small differences in standards, if there are any. Second, when carrying out statistical calculations with these figures, special care must be taken to avoid non-homogeneous groupings. For instance: the weighted average dirham, calculated from all the data in Table 1, is 2.850 g; clearly a misleading figure, and useless as an estimate of a standard. Knowing, as we do, that all the weights have been diminished in some degree, we may assume the original standard to have been higher than the highest value found in practice: in this case, something over 2.887 g. This supposition hinges on the assumption that all the weights in this group conformed to a single standard. Fortunately, this can be tested.

A commonly used method for testing the homogeneity of a group of similar data is by means of a frequency distribution table or histogram. Any group of coins, weights, etc., made to a single standard may be assumed to have a normal (Gaussian) frequency distribution with respect to weight. If the group represents more than one standard, the distribution will be multimodal, i.e. with more than one frequency peak. In the present case, since each denomination of the weights described here has become, as a result of corrosion, a distinct statistical population, we can only construct valid frequency distribution histograms for groups of weights with similar form and like denomination. These can be examined for signs of multimodality. If more than one standard is, in fact, represented in any series of weights of like form, similar multiple frequency peaks should appear in the frequency distribution histograms of all denominations in that series.



¹⁵ The use of these methods in the study of weights was pioneered a hundred years ago by the great Flinders Petrie, at a time when even many physical scientists were only just becoming aware of the science of statistics.

¹⁶ A number of factors may distort the shape of the curve, e.g. wear, clipping of coins, removal of light or heavy specimens, etc. We should not expect them to be operative here. By comparison with corrosion, wear after deposition appears to be a negligible factor in loss of mass (at least at Caesarea): weights and coins are found in all states of preservation from extremely worn to mint condition.

Examination of the frequency distribution histograms of all the larger groups of dinar and dirham weights reveals no convincing signs of multimodality. Such irregularities as are present can be with some confidence attributed to the effects of corrosion. Even the most ragged distributions, e.g. one dinar or one dirham (brick-shaped, inscribed), can be shown to have a better than 10% probability of occurring by chance in samples drawn from normally distributed populations.¹⁷ Their irregularities, moreover, are isolated events; most of the distributions are so regular as hardly to warrant the application of statistical tests. In short it may be said that, in the series of discoid dinar weights and in each separate series of brick-shaped dirham weights of similar form, there is no statistical evidence for the existence of more than one weight standard. This does not prove that more than one standard is not represented, only that the event is unlikely on present evidence. If differences do exist, they are so small as to be masked by the effects of corrosion.

The next question to be considered is whether differences in form correspond to differences in standard. We can test this by making paired comparisons of groups of like denomination and different form. 18 Certainly the largest groups will give the most meaningful results, and it is with these that we should begin. The test can be made more sensitive by eliminating outlying individual values. A simple way of doing this is to calculate the mean and standard deviation of a group, strike out all values deviating from the mean by more than two standard deviations, then recalculate the mean and standard deviation of the reduced group. After carrying out this procedure, we are left with the groups listed in Table 3.19



¹⁷ This can be done by taking a normal curve having the mean and standard deviation of the group being examined, dividing the area under it into sections corresponding to the frequency intervals in the histogram, calculating the expected frequency of occurrence in each section, and comparing these with the observed frequencies by means of a chi-square test. For the most part, I have used a frequency interval of 20 mg.

¹⁸ This is done using Student's t-test. If a variance ratio test indicates that the two variances should not be pooled, Behrens' test can be applied.

¹⁹ This is admittedly not a rigorously correct statistical procedure. It is, however, simple to carry out, and does make the null hypothesis more difficult to prove; so I have taken the liberty of using it. Anyone applying a stricter method to these data will arrive at the same eventual conclusions as I have.

TABLE 3
DIRHAM WEIGHTS
Outlying Values Eliminated*

Units		Polyhedra			Barrels			Cubes			Spheriod s		
	n	x	S	n	x	8	n	x	8	n	x		
20	2	58.40		2	59.12	_							
10	8	28.64	.672	18	29.29	.481							
5	15	14.57	.111	18	14.59	.171				2	14.49		
2				1		_	1	5.850		1	5.780		
1	2	2.895					1	2.782					
1/2							1	1.432					
1/3							2	.948					

Bricks

Units	}	"Bird-E	Eyes"		Inscript	lion s		Punch	Marks
	n	x	8	n	x	8	n	x	S
2	12	5.818	.075	18	5.744	.098			
1	2 5	2.891	.038	44	2.875	.043			
1/2	5	1.441	.028	42	1.427	.032	16	1.411	.044
1/3	1	.960		19	.949	.021	16	.954	.034
1/6	22	.467	.032	61	.471	.015	9	.476	.013
1/12	3	.246	.030	22	.232	.010			

n = no. of specimens $\tilde{x} = mean$ weight s = unbiased best estimate of population standard deviation, calculated from sample.

The only pair of groups whose mean values differ significantly at the 10% level are the 10-dirham polyhedra and barrels. There is a reason for this: of eight polyhedral pieces, five were found under the sea (9-13, average mass of 28.34 g). They have undergone more severe corrosion than the others and thus are lighter. There is no corresponding difference between the means of the 5-dirham groups of these two forms, which we should expect to find if the two forms corresponded, in fact, to two different standards.



[•] Weights eliminated due to deviation from \bar{x} equal to or exceeding 2s: nos. 31, 83, 104, 238, 253, 406, 411, 433, 468, 532, 534, 554, 573, and 596.

The statistical evidence may be summed up by saying that the existence of a single standard for all the dinar weights, and for all the dirham weights must be admitted as a real possibility, even though the evidence available at present is not conclusive. The figures indicate that the standards would be a little over 4.19 g for the dinar, and a little over 2.9 g for the dirham. Other considerations aside, this alone would be enough to disqualify the bronze weights as coin weights; for these figures do not represent the weights of coins in medieval Egypt.²⁰ They are, on the other hand, oddly reminiscent of the reformed coinage standards of 'Abd-al-Malik, and we must consider the possibility that they did, in fact, constitute an attempt to maintain, or revive, these standards—but for what purpose, we can only now speculate.²¹

TECHNOLOGY

The larger weights were evidently cast in molds. Several of them show flaws caused by the occlusion of air bubbles during casting. After being cast, the weights were finished and calibrated by hand. On many of them, the marks of the adjuster's file can be clearly seen. After finishing and adjusting, the decorative features (bird's-eyes) and official stamp were punched on—not necessarily in that order. On some pieces, the inscription has been punched over the "bird's-eye"; on others, the pro-

²⁰ The medieval dirham was always well below this figure; see P. Balog, "History of the Dirham in Egypt from the Fatimid Conquest until the Collapse of the Mamluk Empire," RN 1961, pp. 109–46. The Fatimid dinar was struck at one habba (one barleycorn = 1/72 dinar), i.e. about 60 mg, below the earlier legal standard; S. Lane-Poole, "The Arabian Historians on Mohammadan Numismatics," NC 1884, p. 77.

21 One question which by now has surely occurred to the reader is, where are all the scales? One would expect such an abundance of weights to be accompanied by at least a few balances, or pieces of them. All I have seen from Caesarea (or anywhere else in Israel) are a few fragments of scalepans, balance arms, etc., which might just as well have been Roman as Arab. According to Skinner (above, n. 10), p. 87, no precision balances of the Arab empire are known to have survived. Steelyards (or fragments of them) are to be found; but these were for weighing merchandise.



cedure has been reversed. Why some weights should carry an inscription, and others not, I cannot guess. As for the bird's-eyes, their function may have been to hinder fraudulent readjustment. Unless set closely over the entire body of the weight, however, they would be inadequate for this purpose. It seems more likely that they are purely, or mainly, decorative in character. Anyone who has handled and examined these remarkable objects will have no difficulty in imagining a craftsman's pleasure in producing and embellishing them.

The round weights of the dinar series have been made in the same painstaking way as the barrels and polyhedra. Even the smallest weights of this series can be seen to have been carefully shaped and adjusted.

The larger weights of the brick-shaped dirham series have also been cast and shaped. Occasional traces of fracture marks along the edges suggest that they may have been cast collectively, in blocks or slabs like tablets of chocolate, which could then be broken up and the individual pieces filed and adjusted.

Less care has been taken with the smaller brick-shaped weights. This is clear both from irregularities of shape and from the greater variability of weight within subgroups. They appear to have been cut from sheet metal. Some of the edges are filed smooth, while others show fracture marks. One piece (465) has a deep diagonal gash, clearly produced by the mis-strike of a chisel. It would certainly have been well within the capability of medieval Arab technology to produce a sheet of bronze of uniform thickness, shape it, weigh it, and then divide and cut it up into pieces, each calculated to have a predetermined weight.

Balog, after examining a number of similar weights, concluded that the file marks so clearly seen on many of them are indicative of fraudulent readjustment.²² I believe this conclusion to be based upon an incorrect attribution of denominations, arising out of an insufficiency of specimens available at that time. The evidence presented here indicates, in fact, that these weights were adjusted with great care to ensure the highest possible accuracy. This is an important point to bear in mind when we come to consider their function.



²² Balog (c), pp. 134-35.

DATES OF ISSUE AND ISSUING AUTHORITIES

Precise dating and attribution will be possible, if at all, only after the inscriptions are deciphered. Balog, examining a group of similar weights found in Israel, ascribed most of them to the Fāṭimid period, with some pieces being attributable to Ayyūbid and Mamlūk rulers.²³

The inscription recurring most frequently on the weights examined by Balog was the word 'Imran. In the present assemblage, it occurs a total of 94 times, on weights of almost all forms and denominations. On weight 127, it appears in conjunction with the title "al-Imām," which was used primarily by the Fātimids.24 It also appears upon weights which have been found at sites all over Israel, including Jerusalem, 'Akko, and the Golan area. Balog assigns it (on grounds of style) to the fifth or early sixth century of the Hijra, i.e. the eleventh and twelfth centuries A.D. He supposes it to be the name of an official. One would, in that case, expect confirmation from other sources of the existence of such an obviously important person, but Balog is unable to find any. None of the historical figures named 'Imran which he is able to identify fit at all plausibly into the present context. We cannot, on present evidence, discard the possibility that 'Imrān had some quite different meaning perhaps it was a pious formula, or a technical term whose meaning has been lost.

FUNCTION

What these weights were used for and by whom, we can at present only guess. Balog has referred to them as "coin weights," but this is not an accurate description. A true coin weight is intended specifically



²³ Balog (c).

²⁴ I thank Michael Bates for this observation. He also informs me that several other inscriptions among those whose photographs he has seen are unmistakably Fāṭimid.

²⁵ Balog (a) describes three pieces (1, 36, and 37) as coin weights, though only one (1) has an inscribed denomination ("ten"). They are of forms similar to those described here (barrel, discoid, and brick respectively).

for weighing coins of a particular denomination, as mentioned above, and usually bears an inscription to that effect, identifying the denomination, the weight standard, and the issuing authority.²⁶ True coin weights of glass (ṣanajāt) were widely used in the early Arab empire, particularly in Egypt. Hundreds of them survive in museums and private collections; they have been extensively studied and described.²⁷ Usually (though not invariably) they carry the name of an issuing authority and a coin denomination: "weight of a dinar, full weight"; "dir(ham or two dirham?) kayl"; "a weight of dirham of two-thirds, full weight"; "weight of one-third dinar"; "dirham weight."²⁸

Under the Fāṭimid and Ayyūbid dynasties, the glass ṣanajāt rarely carry a denomination, and their weights are much less uniform.²⁹ Balog has suggested that these later pieces may have served not as weights, but as token currency; this view is, however, not accepted by other scholars.³⁰

With regard to the bronze weights, the scope of the title "coin weights" might conceivably be extended (despite the lack of confirmatory inscriptions) to encompass those pieces whose weight corresponds to that of actual coins, or to multiples of them; but this would still leave the fractional weights undefined.

- 26 "... les poids monétaires sont des poids destinés à la pesée des monnaies, et spécialement fabriqués pour elles, ... "A. Dieudonné, Manuel des Poids Monétaires (Paris, 1925), p. vi. In the introduction to his book, Dieudonné discusses in detail the qualifications of a true coin weight.
- 27 P. Balog, Umayyad, Abbasid and Tulunid Glass Weights and Vessel Stamps ANSNS 13 (New York, 1976); G. C. Miles, Early Arabic Glass Weights and Stamps, ANSNNM 111 (New York, 1948), with Supplement, ANSNNM 120 (New York, 1951); and Contributions to Arabic Metrology 1, ANSNNM 141 (New York, 1958), and 2, ANSNNM 150 (New York, 1963).
- These denominations are illustrated by the following specimens: Miles, Supplement (above, n. 27), no. 18; Balog (above, n. 27), no. 752a and no. 434; Miles, Metrology 1 (above, n. 27), no. 16; Miles, Metrology 2 (above, n. 27), no. 164.
- ²⁹ W. M. F. Petrie, Glass Stamps and Weights Illustrated from the Egyptian Collection in University College, London (London, 1926), pp. 00.
- ³⁰ Balog (a), p. 255. Balog discussed this subject in detail in "Les jetons Fātimites en verre," *RBN* (1961), pp. 171-83, a paper to which I have not had access. For a contrary view, see M. L. Bates, "The Function of Fāṭimid and Ayyūbid Glass Weights," *JESHO* 24 (1981), pp. 63-92.



There is documentary evidence to show that payment in fractions of dinars smaller than halves, thirds, or quarters was a common occurrence in the Arab world. Miles cites several examples.³¹ He supposes that, during the first hundred years or so of the Arab empire, such fractional payments were made either in silver dirhams or in copper fulus, weighed out with special glass weights according to a periodically varying rate of exchange.

The manufacture of glass fals weights for weighing copper coin stopped, according to Miles, at about the middle of the eighth century A.D. We must suppose that other methods of making fractional payments were adopted after that time. One possible method, involving the use of fractional bronze weights, is suggested by the cut coins found in considerable number at Caesarea. These are fragments of gold and silver coins which have been deliberately chopped up with shears. I have examined and weighed more than a hundred such gold fragments, all of which are surface finds picked up at Caesarea by amateur collectors. They range in weight from about one gram to an astonishing 0.017 g (this is the smallest piece so far measured, although not necessarily the smallest used). They include fragments of Islamic and Crusader coins.³²

It does not seem unreasonable to suppose that the fractional bronze weights could have been used for the precise measurement of small quantities of gold and silver. The relative weights of the cut coins and of the bronze weights, respectively (the latter being at least an order of magnitude larger than the smallest of the former), suggest that the



³¹ Miles, Early Arabic (above, n. 27), pp. 7-8. These examples are all from the early Arab empire. Michael Bates informs me that S. D. Goitein, Mediterranean Society: The Jewish Communities of the Arab World, 1: Economic History (Berkeley, 1967) and 2: The Community (Berkeley, 1971), provides dozens of examples of fractional payments of dinars and dirhams from the Geniza documents of the eleventh to thirteenth centuries.

³² A large number of Latin cut gold pieces are described in detail in J. D. Brady "A Firm Attribution of Latin Gold Coinage to Twelfth-Century Jerusalem," *ANSMN* 23 (1978), pp. 133–47, pls. 28–31. In a more recent publication, "Coinage of the Crusades and the Latin East in the Ashmolean Museum, Oxford" (London, 1983), pp. 30–32, D. M. Metcalf mentions recent research (shortly to be published) which suggests that the Latin gold may have been struck, not on coin blanks, but on strips of metal—intended, one must suppose, specifically for cutting.

procedure would have consisted of adding bits of cut metal to one pan of the scales, until an exact, preselected quantity (determined by the weights previously placed in the other pan) was made up.³³ The use of cut coins, rather than other forms of bullion of uncontrolled purity such as gold dust, foil, or wire, would have been a good guarantee of fineness, reducing the possibility of sharp practice without the need for tedious assay procedures.³⁴ The lower gold content of the Latin coins would have been no obstacle to their being used, so long as the cut pieces were easily recognizable—as, in fact, they are³⁵—and a suitable correction could be made.

Arabic science and technology: see Skinner (above, n. 10), pp. 82–88. A thirteenth century source, Ibn Ba'ra, (A. S. Ehrenkreutz, "Extracts from the Technical Manual on the Ayyūbid Mint in Cairo—the Manuscript of Ibn Ba'ra," BSOAS 15, 3 [1953], p. 435) mentions a difference of one-tenth of a grain as a criterion for rejection or acceptance of a sample in the gravimetric analysis of refined gold. This is a difference of not more than 5 or 6 milligrams. Such precision was not attained in Europe until the sixteenth century; see H. T. Pledge, Science Since 1500 (London, 1939), p. 126.

³⁴ A description of thirteenth century assay methods is given by Ibn Ba'ra (above, n. 33, pp. 433-35). Besides being of guaranteed fineness, the cut coin fragments had the additional advantage of being legal tender, while gold dust and other forms of bullion were not; the latter would therefore be ineligible as means of payment. I am indebted to Michael Bates for this observation.

35 A number of objections could be raised to the suggestion that the Latin fragments were intended for the same purpose as the Arabic cut gold. Arabic gold coinage was maintained for centuries (with few and short-lived exceptions) at a uniformly high standard of fineness, see E12, s.v. "dinar" (Miles), whereas the Latin fragments analyzed so far (A. A. Gordus and D. M. Metcalf, "Neutron Activation Analysis of the Gold Coinages of the Crusader States," Metallurgy in Numismatics 1 (1980), pp. 119-50, esp. p. 150) range in gold content from 50.4 to 61.2%; perhaps too high a variability for the purpose envisaged here. Moreover, the Latin pieces tend to be much heavier than the Arabic: of 101 Latin pieces listed by Brady (above, n. 32), only four weigh less than 100 mg, the lightest weighing 30 mg; whereas of 84 fragments of cut Arabic gold from Caesarea weighed by me, 39 weigh less than 100 mg and 17 less than 50 mg. Gordus and Metcalf suggest that the Latin gold fragments may have been made, not as currency, but for sale to pilgrims, perhaps to be used as votive offerings. Even if this were so, some of them may have gotten into circulation: one collector of my acquaintance has found at Caesarea a total of 42 cut gold pieces, of which 13 are Latin.



Cut pieces of Arab silver coins are found less frequently. They are much harder to see than gold, being usually coated with a dark patina or incrustation. The fragments tend to be larger than the gold (18 pieces in my collection range in weight from 0.13 to 0.90 g), though this may simply be an indication of their relative inconspicuousness. One might have thought that the great variability of fineness of successive issues of dirhams, under the Fāṭimids and subsequent dynasties, might have made these coins unattractive candidates for this sort of treatment. Still, the cut coins exist (one silver fragment in my collection has a legible date: 375 A.H.) and so do the weights; the dirham fractional weights are, in fact, much more numerous than those of the dinar. It may be that the use of cut silver coins was far more widespread than the number of surviving fragments would lead us to believe.

Another possible use of the cut coins might be "... to bring the weight of large payments up to an even number. In other words, if a payment of 100 dinars were needed, but the total weight of 100 coins came only to 99 3/4 mithqals, a few chopped bits were thrown into the pan to make the full weight."³⁷ This suggestion provides an explanation not only for the cut coins, but also for the multiple weights. It also calls forth another question: what was "the full weight" of 100 dinars?

After the monetary reforms of 'Abd-al-Malik at the end of the seventh century A.D., gold and silver coins were struck upon uniform standards throughout much, if not all, of the Arab empire. The standards were based upon Arabic units of weight.³⁸ They do not seem to have been strictly ob-



³⁶ The vicissitudes of the dirham (with respect to both weight and fineness) in Egypt in particular are discussed in detail in P. Balog (above, n. 20) and in A. H. Ehrenkreuz, "Contributions to the Knowledge of the Fiscal Administration of Egypt in the Middle Ages," *BSOAS* 16, 3 (1954), pp. 502-14.

³⁷ The quotation is from a letter to me from Michael Bates. I am glad of this opportunity to thank him for the advice and encouragement he has given me since I began the work described here.

³⁸ P. Grierson, "The Monetary Reforms of 'Abd al-Malik," *JESHO* 3, 3 (October 1960), pp. 241-64. Grierson makes the interesting suggestion that the Arabic mith-qal may have had its origin in the Attic drachm. For the standard weights of the post-reform dinar and dirham, he gives the usual figures of 4.25 and 2.97 g respectively, quoting Miles. G. Miles, "Byzantine Miliaresion and Arab Dirhem: Some Notes on Their Relationship," *ANSMN* 9 (1960), p. 214, traces the origin of these figures to a paper published in 1870 by E. von Bergmann (to which I do not have access).

served for very long; there is evidence of variation at regional mints and even of changes in the standard weight of coins struck at mints under direct caliphal control.³⁹ From A.D. 865 onward, the weight of the dirham became very erratic⁴⁰ and in Egypt under the Fāṭimids (mid-tenth century onward) there was also a progressive debasement of the silver.⁴¹ The fineness of the gold coinage was kept very high for centuries,⁴² but from the tenth century onward the standard weight of the dinar appears to have been (in Egypt, at least, which is the region that most immediately concerns us) subject to frequent alterations as a matter of government policy.⁴³ Under the 'Ayyūbid sultans (late twelfth century) weight standards for gold coins appear to have been abandoned entirely.

The question we must try to answer is, how do these bronze weights fit into such a picture? What standard or standards do they embody? Would a new set of weights be needed every time a change was made in the official weight of coins? Would this mean calling in all previous weights? By what means would a new issue of weights be distinguished from earlier, no longer valid issues?

The most obvious way to distinguish a new issue from an old, would be by an appropriate inscription; but most of these weights are an epigraphic. A change in appearance might have been used; certainly, the different groups of weights show a considerable variety of form. But, as we have seen, the difference in weight between groups of weights of different appearance is unlikely to be significant. The physical evidence suggests, in fact, that all the dinar weights were made to a single standard, and so were most, if not all, of the dirham weights.

They are not confirmed by the experimental evidence published during the last century, including the data of Miles himself: the allowances he makes for loss of weight through wear are excessive. A detailed discussion is out of place here, but I would suggest a figure of 4.22-4.23 g as being closer to the true weight of the reformed dinar, than the accepted figure of 4.25 g. As for the reformed dirham, probably the most that can be said about it is that it weighed about 2.9 g.

- ³⁹ M. L. Bates is most emphatic on this point. He urges extreme caution before making pat assumptions about medieval Islamic coin standards.
 - ⁴⁰ Miles (above, n. 38), p. 212.
 - 41 Balog (above, n. 36).
 - 42 Ehrenkreutz (above, n. 36), p. 503, n. 2; also EI², s.v. "dinar" (Miles).
- ⁴³ Balog (above, n. 36), p. 111; S. Lane-Poole (above, n. 20), p. 77, s.v. "dinar." Bates also confirms this.



Looking at these weights against a background of frequent changes in the official weight and fineness of the coinage, one feels inclined to see in them an attempt to maintain a stable weight standard, against which periodical fluctuations in the coinage standards could be measured and appropriate corrections made. Such a view would require us to assume that the weights were in use over a long period—decades, or even centuries. The decipherment of the inscriptions will probably help to clarify this. Other possibilities can not, however, be dismissed: for instance, that all the weights were made within a very brief period of time (hence, perhaps, the remarkably frequent occurrence of 'Imrān) in connection with one or another of the currency reforms of this period. In the latter case, the name "coin weights" could be applied to them; if, however, they represent units of weight not associated with a particular coinage issue, some other name should be found, "specie weights," perhaps. 44

Whatever the precise function of these weights, it is obvious that they would be needed for almost all cash transactions. Any member of the community who needed to handle money would have had to have a set. This would account for the enormous numbers in which they appear to have been issued. I have examined well over a thousand and at least as many more have to my knowledge been picked up at Caesarea. The number of weights used there must have run into tens, perhaps hundreds of thousands.⁴⁵ Such an abundance of weights would not have been

Another point worth making is that, even if we do not accept the Latin cut gold fragments as accessories to the coinage, we should not a priori suppose that the Arabic bronze weights were not in use during the Crusader period at Caesarea. A record of stray coin finds, kept by an amateur collector who for years searched all around Caesarea, throws an interesting light on the nature of the money in circulation during this period. He lists the following finds (silver and copper coins only): Crusader coins, 9; Arabic coins, eighth century, 7; ninth century, 7; tenth and eleventh



⁴⁴ Since it is certain that the weights were used for weighing money, though not in the European sense of verifying individual coins, Bates suggests calling them simply "money weights."

⁴⁵ I must emphasize that there is no reason to look upon Caesarea as a special case in this respect. Weights of almost all the types described here have been found all over Israel and in Egypt as well. The explanation for the abundance of material from Caesarea lies in the special conditions (ease of access, large number of local enthusiasts, etc.) at that site.

necessary had they been intended exclusively for use by officials, by gold- and silversmiths, or by any other relatively small specialist group.

ACKNOWLEDGEMENTS

I am very grateful to all those collectors who allowed me access to the weights in their collections. I have already expressed my thanks to Michael Bates for information and counsel freely given. Finally, I could not conclude this paper without a word of homage to the memory of the late Paul Balog. His published works, and the correspondence which we carried on for two years, were my chief guide into the bewildering world of Islamic metrology. His great learning, his equally great patience, and above all his unfailing kindness are sorely missed.

APPENDIX

Polyhedra: Dirhams

- 1. $143.7 \quad 5 \times 12$ cl.
- 2. 58.30 5×10
- 3. $57.50 \quad 3 \times 8 \quad \text{cl.}$
- 4. 56.28 5×8 heavily corroded
- 5. 58.50 1×8
- 6. $58.57 1 \times 8$ cl.
- 7. $29.58 \quad 3 \times 8$
- 8. 28.86 3×8 cl. Imrān
- 9. 28.95 3×8
- 10. 28.52 3×8
- 11. $28.58 \quad 3 \times 8$
- 12. 28.16 3×8 bird's-eyes on middle row only
- 13. 27.49 3×8

centuries, fewer coins (number unspecified); twelfth century, 4 coins; thirteenth century, 13 coins (H. Hamburger, "Caesarea Coin-Finds and the History of the City" [in Hebrew], Bulletin of the Jewish Palestine Exploration Society 15, 3-4 [1950], pp. 78-82).



```
cl. inscr. 'Imran (?) overstruck with bird's-eye
14.
       29.97
                 3 \times 8
       28.43
                 3 \times 8
15.
16.
       29.39
                 3 \times 8
                           cl. (similar to 6)
17.
       28.84
                 1 \times 8
18.
       14.63
                 3 \times 6
19.
       14.54
                 3 \times 6
20.
      14.56
                 3 \times 6
       14.64
21.
                 3 \times 6
22.
       14.58
                 3 \times 6
       14.41
                 3 \times 6
23.
24.
       14.38
                 3 \times 6
                            'Imrān
25.
       14.37
                 3 \times 6
26.
       14.60
                 3 \times 6
       14.77
27.
                 3 \times 6
28.
      14.64
                 3 \times 6
                            'Imran overstruck with bird's-eye
29.
       14.59
                 3 \times 6
       14.54
                           inscr.
30.
                 2 \times 7
       14.01
                           inscr.
31.
                 3 \times 6
       14.37
                 3 \times 6
                           cl. 'Imrān
32.
                           inscr.
33.
       14.56
                 3 \times 6
                            'Imrān
34.
       14.69
                 3 \times 6
       5.803
35.
                 5 \times 8
                           cl.
                 3 \times 8
36.
       5.727
                            cl.
       2.967
                 3 \times 6
37.
       2.824
                 3 \times 6
38.
       0.938
                 3 \times 6
39.
```

Polyhedra: Dinars

```
cl. inscr.
      41.89
                 3 \times 8
40.
                           cl. plain faces
                 2 \times 10
41.
       40.78
                           Bird's-eyes on middle row only, 'Imran on both sides
                 3 \times 6
42.
       41.67
43.
       20.76
                 3 \times 8
       20.84
                 2 \times 8
44.
45.
       20.72
                 3 \times 8
                 3 \times 8
46.
       20.88
47.
       8.144
                 3 \times 8
                           cl.
       2.010
                 2 \times 8
48.
49.
       1.352
                 3 \times 6
       1.395
                 2 \times 8
50.
       1.400
51.
                 2 \times 7
       1.308
                 1 \times 6
52.
```

Cubes: Dirhams

58. 0.940

```
53. 5.857 "cubo-octahedral"
54. 5.676 cl. 'Imrān
55. 2.782
56. 1.432
57. 0.956 'Imrān
```

Spheroids: Dirhams

```
59. 14.74 inscr. five bird's-eyes on other face
60. 14.24 six bird's-eyes on face
61. 5.780
```

Spheroids: Dinars

```
62. 38.01 cl.
63. 23.60 cl.
64. 19.66 cl.
65. 8.477
66. 7.771 cl. seven bird's eyes on face
67. 7.709 heavily corroded and encrusted
68. 4.263 six bird's-eyes on each face
```

Barrels: Dirhams

69.	58.79	cl. inscr.	87.	29.45	
70.	59.04		88.	28.75	
71.	59.21		89.	29.25	
72 .	30.17		90.	29.14	inscr.
73.	29. 00		91.	14.60	
74.	29.72		92.	14.75	
75.	29.48		93.	14.48	
76.	29.24	inscr.	94.	14.26	
77.	28.93		95.	14.73	inscr.
78.	28.64		96.	14.71	
79.	29.06		97.	14.64	
80.	29.27		98.	14.57	
81.	29.47		99.	14.49	cl. inscr.
82.	28.97		100.	14.70	
83.	27.98		101.	14.29	
84.	30.12	inscr.	102.	14.78	
85.	28.58		103.	14.43	
86.	30.05		104.	14.17	

105.	14.75	inscr.	109.	14.63
106.	14.35		110.	14.61
107.	14.57		111.	5.814
108.	14.84			

Discoids: Dinars

112.	41.12	cl. h 11 mm, d at waist	25 mm			
113.	41.21	h 14 mm, d at waist	23 mm			
114.	21.32	h 10 mm, d at waist	20 mm			
115.	8.382	inscr.				
116.	8.426					
117.	7.736	inscr.				
118.	8.390					
119.	8.184					
12 0.	8.374					
121.	8.447					
122.	8.318	cl. inscr.				
123.	8.383					
124.	8.460					
125.	8.253	cl. inscr.				
126.	8.224	cl. inscr. on both faces				
127.	8.083	cl. 'Imrān on one face, in	nscr. on	other fa	ce	
128.	8.200	cl. inscr.				
129.	3.990	cl. 'Imrān	149.	4.114	'In	ırān
130.	4.216		150.	4.140		
131.	4.060		151.	4.285		
132.	4.230		152.	4.033		
133.	4.243		153.	4.081		
134.	4.070		154.	3.951		
135.	4.238		155.	4.111		
136.	4.212		156.	4.211		
137.	4.210		157.	4.163		
138.	4.209		158.	4.104		
139.	4.020		159.	4.133		
140.	4.050		160.	4.254		
141.	4.197		161.	4.224		
142.	4.020		162.	4.120	insc	er.
143.	4.206		163.	4.238		
144.	4.088		164.	2.039	cl.	ʻImrān
145.	4.118		165.	2.052	cl.	
146.	4.166		166.	2.069		
147.	4.152	ʻImrān	167.	2.044		
148.	4.160	'Imrān	168.	2.025	cl.	inscr.



169.	2.031		198.	1.346	inscr.
170.	2.048		199.	1.366	inscr.
171.	2.099	'Imrān	200.	1.310	
172.	2.078	'Imrān	2 01.	1.369	
173.	2.078		202 .	1.256	
174.	2.075	ʻImrān	2 03.	1.385	
175.	2.073	inscr.	204.	1.375	
176.	2.035		2 05.	1.377	
177.	2.095		2 06.	1.374	
178.	2.040		207.	1.382	rān
179.	2.034	inscr.	208.	1.368	
180.	2.019		209.	.661	ʻImrān
181.	2.022		2 10.	.671	'Imrān
182.	2.085	inscr.	211.	.689	ʻImrān
183.	2.023		212.	.686	ʻImrān
184.	1.950		213.	.676	'Imrān
185.	2.042		214.	.660	
186.	2.090		2 15.	.691	
187.	2.067	'Imrān	216.	.695	
188.	2.088	cl. inscr.	217.	.670	'Imrān
189.	2.069	cl. inscr.	218.	.675	ʻImrān
19 0.	2.094	cl. inscr.	219.	.607	
191.	2.065		22 0.	.345	ʻImrān
192.	1.386		22 1.	.335	
193.	1.347		222 .	.356	
194.	1.377		223 .	.319	
195.	1.404		224.	.324	ʻImrān
196.	1.361		225 .	.158	ʻImrān
197.	1.330	cl. inscr.	226 .	.177	

Brick-Shaped Weights: Dirhams

"Bird's-Eye" Marked Weights

The number 1, 2, 3, etc., following the weight indicates the number of "bird's-eye" marks on each of the two major faces.

227 .	5.835	2		235.	5.782	1	
22 8.	5.853	2		236.	5.614	1	
229 .	5.821	2		237.	5.880	1	
23 0.	5.821	2		238.	6.072	1	
231.	5.833	2		239.	5.868	1	
232.	5.751	2	•	24 0.	5.802	4	cl.
233.	5.876	2		241.	5.608	5	cl.
234.	5.876	2		242.	2.895	1	



243.	2.828	1			272 .	1.462	1	
244.	2.879	1			273 .	1.395	1	
245 .	2.946	1			274 .	.960	1	
246.	2.860	1			2 75.	.504	1	
247.	2.873	1			276 .	.451	1	
248.	2.915	1			277 .	.488	1	
249 .	2.873	1			2 78.	.433	1	
25 0.	2.945	1			279 .	.473	1	
251 .	2.930	1			280.	.497	1	
2 52.	2.919	1			281.	.439	1	
253 .	2.717	1			282.	.428	1	
254 .	2.910	1			283.	.418	1	
2 55.	2.918	1			2 84.	.477	1	
2 56.	2.881	1			2 85.	.417	1	
257.	2.908	1			286.	.508	1	
258.	2.911	1			287.	.480	1	
2 59.	2.928	1			2 88.	.520	1	
260.	2.807	1			2 89.	.492	1	
261 .	2.872	1			29 0.	.431	1	
262.	2.854	1			2 91.	.493	1	
263.	2.933	1			292 .	.432	1	
264 .	2.870	1			2 93.	.500	1	
2 65.	2.836	1			294.	.474	1	
2 66.	2.928	2			2 95.	.460	1	
2 67.	2.865	2			2 96.	.451	1	
2 68.	1.356	3	cl.		297.	.247	1	
269.	1.464	3			298.	.275	1	
27 0.	1.450	1			299.	.215	1	
271.	1.432	1			3 00.	.259	1	cl.

Inscribed Weights

All the weights in this group bear an inscription on one side only, unless otherwise indicated. All instances of the word 'Imrān are noted.

```
301. 5.896
302. 5.834
              'Imrān
303.
      5.869
              'Imran
304.
      5.690
305.
      5.830
             on reverse, two "bird's-eyes"
306.
      5.683
307.
      5.743
308.
      5.670
309. 5.650
310. 5.644
             no inscr. on one side, five punch marks :: ; on reverse, three punch
              marks 🗽
```



200		BIONEE	TIOLLA	MD	
311.	5.852		255	2 620	
311. 312.	5.911		355.	2.839	
313.	5.672		356.	2.890	
314.			357.	2.830	
	5.767	-1	358.	2.856	
315.	5.665	cl.	359.	2.915	
316.	5.882	•	360.	2.880	
317.	5.730	cl.	361.	2.866	
318.	5.645		362.	2.877	
319.	5.844		363.	2.894	
320.	5.850		364.	2.869	
321.	5.591	cl.	365.	2.925	'Imrān
322.	5.560	cl.	366.	2.918	
323.	2.805	cl.	367.	2.936	
324.	2.808	cl.	368.	2.874	cl. 'Imrān
325.	2.950		369.	2.800	
326.	2.740	cl.	37 0.	2.911	
327.	2.760	cl.	371.	2.895	
328.	2.835	cl.	372 .	2.927	
329.	2.769		373.	2.920	
330.	2.804	cl. 'Imrān	374.	2.928	
331.	2.817	'Imrān	375.	2.901	cl.
332.	2.823		376.	2.894	on reverse, one "bird's-eye"
333.	2.933	cl.	377.	1.441	
334.	2.898	'Imrān	378.	1.448	ʻImrān
335.	2 .870		379.	1.418	ʻImrān
336.	2.948	cl.	380.	1.467	
337.	2.903	'Imrān	381.	1.416	
338.	2.827	'Imrān	382.	1.418	
339.	2.892		383.	1.432	cl.
340.	2.896		384.	1.446	ʻ Imrān
341.	2.905	'Imrān	385.	1.227	cl. 'Imrān
342.	2.816	'Imrān	386.	1.456	'Imrān
343.	2.816	'Imrān	387.	1.448	'Imrān
344.	2.807	ʻImrān	388.	1.475	'Imrān
345.	2.881		389.	1.361	
346.	2.913	ʻImrān	390.	1.423	
347.	2.816		391.	1.427	'Imrān
348.	2.886		392 .	1.369	
349.	2.866	•-	393.	1.450	
350.	2.848	'Imrān	394.	1.360	
351.	2.827	 -	395.	1.321	cl. 'Imrān
352.	2.877	'Imrān	396.	1.441	
353.	2.887		397.	1.437	
354.	2.924		398.	1.405	
			550.	1.700	

LIONEL HOLLAND



198

399.	1.462		443.	.962	
400.	1.463	'Imrān	444.	.958	
401.	1.359		445.	.957	
402.	1.422		446.	.908	
403.	1.421	'Imrān	447.	.957	
404.	1.450		448.	.907	
405.	1.457	'Imrān	449.	.945	
406.	1.281		450.	.936	ʻImrān
407.	1.448		451.	.932	
	1.431		452 .	.971	
409.	1.433		453.	.487	
410.	1.411	'Imrān	454.	.474	
411.	1.335		455.	.500	cl.
412.	1.391		456.	.469	
413.		inscr. on both faces	457.	.381	cl.
414.	1.435	'Imrān	458.	.452	cl.
415.	1.420		459.	.465	cl.
416.	1.489		460.	.472	ʻImrān
417.	1.416		461.	.489	
418.	1.369		462.	.482	
419.	1.408		463.	.462	ʻImrān
42 0.	1.411		464.	.465	ʻImrān
421.	1.465		465.	.482	
422.	1.381	cl.	466.	.459	
423 .	1.535	cl.	467.	.457	ʻImrān
424.	1.410	cl.	468.	.543	
425.	1.412	cl.	469.	.452	ʻImrān
42 6.	1.318	cl.	470.	.482	
427.	1.430	cl.	471.	.465	
428.	1.432	cl.	472.	.489	
429.	1.409	cl.	473.	.463	
430.	1.397		474.	.468	
	1.454		475.	.469	ʻImrān
432.	.940		476.	.458	
	1.005		477.		(Tanana San
434.	.976	(7	478.	.481	ʻImrān ʻImrān
435.	.942	'Imrān	479.	.476	Imran
436.	.907	cl. 'Imrān	480. 481.	.457 .460	'Imrān
437. 438.	.951	Imran	481. 482.	.478	IIIIan
	.927 .946		483.	.466	
439. 440.	.980	'Imrān	484.	.483	
440. 441.	.972	Ailii aii	485.	.486	
441. 442.	.972		486.	.476	'Imrān
444.	.970		400.	. 770	A I I I I I I I



200			Lionel	Holl	AND	
487.	.483			519.	.460	
488.	.478			520.	.460	
489.	.466	'Imrān		521.	.377	
490.	.446			522 .	.349	
491.	.478			523.	.344	
492.	.455			524 .	.230	'Imr
493.	.471			52 5.	.216	
494.	.450			526 .	.230	ʻImrān
495.	.471			527.	.232	
496.	.469			528 .	.221	ʻImrān
497.	.468	ʻImrān		529 .	.236	ʻImrān
498.	.476	'Imrān		530.	.255	
499.	.479			531.	.225	ʻImrān
500.	.467			532 .	.274	
501.	.479	ʻ Imrān		533.	.243	
502 .	.464	ʻ Imrān		534.	.286	
503.	.471	'Imrān		535.	.230	ʻImrān
504.	.470			536.	.231	
505.	.398	cl. 'Imrān		537.	.222	ʻImrān
506.	.456	ʻImrān		538.	.246	
507.	.474			539.	.239	
508.	.485			540.	.221	
509.	.440			541.	.237	
510.	.467	ʻImrān		542.	.236	
511.	.474			543.	.245	
512 .	.474			544.	.226	cl.
513.	.474	'Imrān		545.	.232	
514.	.495			546.	.240	
515.	.475			547.	.230	
516.	.486			548.	.214	ʻImrān
517.	.466	'Imrān		549.	.779	
518.	.458			550.	.654	
Inscribed Weights with Punch Marks						
	Three	Punch Marks		560.	1.408	
551.	1.440			561.	1.445	
552.	1.391			562 .	1.407	
553.	1.425			563.	1.393	
554.	1.294			564.	1.436	
555.	1.411			565.	1.452	
556.	1.455			566.	1.425	
557.	1.457	cl. 'Imrān		567.	1.435	
558.	1.468			568 .	1.428	cl.

569.

1.358



559. 1.350

570.	1.402 cl.	587963
571.	1.459 cl.	588944 cl.
	Two Punch Marks	589949 cl.
572 .	.972	590945
573.	1.152	One Punch Mark
574 .	1.003	591474
575.	.959	592487
576.	.964	593486
577.	.861	594472
578.	.960	595466
579.	.967	596424
580 .	.899	597451
581.	.942	598472
582 .	.961	599494
583.	.986	600484
584.	.979	601437 cl.
585.	.966	No Inscription, Two Punch Marks
586.	.945	602107



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J. KOLBAS

In 1970, the late Paul Balog published a catalogue of his collection of Islamic bronze weights from Egypt.¹ Later, he donated the group to the ANS. Among these weights is a remarkable piece that deserves special attention, his catalogue item 22. It was remarkable as the only known Mamlūk bronze weight, the only weight to be stamped with a die from the mint. It is, unfortunately, a forgery. Balog's description is:

Bahrī Mamlūk, al-Ashraf Sha'bān II, 764-778 H. = 1363-1377 AD; Five Wuqīyyah. Dated: Cairo, 768 H. Barrel type, dark brown and green patina. The top surface has been struck with a die which is similar to the reverse of the copper fals of Cairo, dated 768 H. The bottom is an epigraph [sic]. The legend, written in the typical Naskhy of the Cairo mint of this period, does not contain the sultan's name, but the mint and date are clear. Cf. No. 441 of the writer's work on Mamlūk coinage. Height: 29. Diam at the waist: 31. Diam. of top and bottom: 24 each. Weight: 145.55.2

Upon examination, the object is precisely as he has described it. Even the weight, checked on a different scale 15 years later and after shipment from Rome to New York, is exceedingly close—only two-hundredths of a gram heavier. However, it is also evident that the stamp supposedly

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¹ P. Balog, "Islamic Bronze Weights from Egypt," JESHO 13 (1970), pp. 235-55.

² Balog (above, n. 1), p. 250.

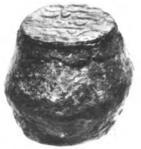






Fig. 2

made by a coin die is none other than a copper coin itself, filed to fit the top of the weight.

The smooth, dark brown color of the coin does not match the rest of the body which has an atypical hard, shiny, dark green patina. Usually corroded weights are a lighter green color and have a porous surface with tiny pits. This porous surface results in a soft—not glossy—coating but yet does not destroy the hard, sharp edges on the weight. The main body, then, has both an unusual color and surface texture, whereas the coin has no patina at all. Indeed, the coin has been soldered on by a mixture which is easily detectable since it is cracking away from both the main body and the coin. The plate in Balog's article shows the same condition it now has but a new view is provided here demonstrating specifically that the edge of the coin is visible above the solder (Fig. 1).

Since the green patina on the solder is exactly like that on the main body, suspicion immediately arises that the body may not be genuine. Indeed, it does not have sharp edges defining the bottom and mid-rib similar to other weights. Moreover, its rib is uneven, rising at an angle across the midsection (Fig. 2) unlike any other weight in the ANS collection. Not only does it lack the smooth, even cast and tooled surface of the other weights but, perhaps most significantly, there are no lathe marks or circles around the rims of the top and bottom planes. This lack of marks indicates that the standard manufacturing technique was not used. In all probability, the main body is a roughly made, modern copy of a large medieval weight.

The most likely candidate for its prototype is the Ayyūbid weight 16 of the catalogue which has the same size and shape. The probability that it is the model is enhanced by many tiny fissures of cracking bronze



not commonly found on weights which, at first glance, seem comparable to the splitting solder around the coin of weight 22. As Balog himself noted, "These small objects, mostly regarded by the fellahin who dig them out of the soil as commercially without value, have been thrown away more often than not. Even when they were offered to antique dealers, only the more alert have bought them and saved these unassuming, nevertheless valuable documents." It seems that one dealer was very alert, indeed, and might even have had a particular interested customer in mind, Dr. Balog himself. As "unassuming" as bronze weights truly are and as knowledgeable as Dr. Balog was, it appears nothing can evade the forger.

Although the recognition of this object as a clever curiosity creates a bemused smile, it also triggers a concerned reaction: now, there are no known Mamlūk bronze weights. Most Islamic weights, except for Ottoman ones, generally have miniscule stamps—often only 'adl, "correct, just," can be deciphered. The problem is exacerbated because collections of Islamic bronze weights are rare and limited. Without the interest of Paul Balog, George Miles and E. T. Newell, the ANS collection would hold only a few of its approximately 160 weights. Even the British Museum has not actively sought them until recently. I have looked at the weights of the Petrie collection⁴ and those of the recent Fusṭāṭ excavations which likewise do not provide any more hope of discovering a single verifiable Mamlūk bronze weight. Is it conceivable that the Mamlūks did not use bronze weights?

In spite of the fact that there are many treatises on weights and measures, none, to my knowledge, mention the use of "copper" weights during this specific era. The Hisba manuals are difficult to date and it is also difficult to identify the places they profess to describe. Chief



³ Balog (above, n. 1), p. 235.

⁴ W. M. Flinders Petrie, Ancient Weights and Measures (rpt. Warminster, 1974), pl. 7, nos. 71–746, text on p. 6, no. 14, "Barrel." Petrie hardly recognizes these weights in the text but Balog in his discussion (p. 234) of Petrie does not include all the Islamic weights, especially the types in the 71 series. Petrie's purpose was to provide the design for shape analysis. The single drawing does not indicate that the collection may hold hundreds of weights in different sizes for each shape. Essentially uncatalogued, the weight collection is the largest in the world of ancient and medieval Near Eastern, especially Egyptian, weights, measures and scales.

sources from the time fail to give adequate information about actual objects used to weigh everyday exchanges, either money or goods.⁵

It could be an academic exercise to ask such a question since the society obviously did weigh and measure things. The datable manuscript or weight may not yet have been found. But the answer is not so simple. The Mamlūks had another choice, namely an extremely copious supply of glass weights. These, however, to all intents and purposes, ceased with the second accession of the first Circassian ruler, Barqūq, in 792/1390 whereupon broad and sweeping monetary changes began to take place. Even with the glass weight option, there are still 127 years with no known weights of any kind.

Consequently, the disappearance of the Sha'bān bronze weight through forgery spotlights an important but as yet unexplained possible lacuna in the history of Islamic weights and measures. This, in turn, exposes our lack of basic knowledge about the method of commercial transactions in Mamlūk Egypt.

⁵ Al-Magrīzī in his Kitāb al-Mawā'iz wa'l-I'tibār bi Dhikr Khiţaţ wa'l-Ath**ār** 1 (Beirut, rpt., n.d.), pp. 463-64, under the heading "The Hisba and the Dar al-'Iyar" states, "The standard ('iyār) had a place known as the Bureau of Weights and Measures (Dar al-'Iyar) which tests all the balances and weights (sanj). The Diwan al-Sultani provides for this bureau which requires it (to test) types (of weights) like copper (bronze), iron, wood, glass and other good substances." At the end, he adds, "This bureau still exists." Nevertheless, it is quite clear that al-Magrizi is describing the situation as it was created under Şalāḥ al-Dīn who reformed the administrative system. At another point in the Khifal 1, p. 110, he also describes the bureau and its activity in Salāḥ al-Dīn's time in much briefer terms, not including the last statement that it still exists. It may well not have because, more than likely, al-Maqrizi was copying from an expanded and later version of Ibn Mammati's administrative manual, Kilāb Qawānin al-Dawāwin (Cairo, 1943), p. 334, "Dār al-'Iyār," which was written at the time of Şalāḥ al-Dīn's changes. One clue to this possibility is that Ibn Mammati lists the types of weights in the same order as al-Maqrizi: copper, iron, wood and glass. Furthermore, in al-Maqrizi's time (d. 845/1441), there were no more official emissions of glass weights. Iron and wood weights yet remain to be discovered for any time. It is also significant that al-Magrizi does not mention these objects in his other works, especially his treatises on famines, the history of money, and weights and measures. Finally, al-Qalqashandi's (d. 821/1417) administrative manual, Şubḥ al-Ashā' (Cairo, 1919–22) does not list any such bureau or say anything about weights except that there were weights calibrated to the silver standard (vol. 3, p. 437). Al-Magrizi's reliability about numismatic history has proven faulty on a number of other points before. This would not be the first case of carelessness on his part.



THE EPIGRAPHY OF TIMURID COINAGE: SOME PRELIMINARY REMARKS

(Plates 37–38)

LINDA KOMAROFF

Inscriptions are the most characteristic and often the sole identifying feature of Islamic coins. These numismatic inscriptions, like the inscriptions that pervade so much of Islamic art and architecture, have two functions: to inform and to decorate. The objectives of an epigraphic study are therefore twofold: one, to decipher and interpret an inscription within its given context and two, to analyze the individual scripts or letter forms and to study their evolution. This second aspect of epigraphy is one which frequently concerns the historian of Islamic art; however, it is a channel that is rarely explored in the study of Islamic coins. This is the aspect of Timurid numismatic inscriptions with which the following discussion is concerned.

At present, no comprehensive study exists of the coinage of the Timurid dynasty that ruled in Iran from 771-913 H./A.D.1370-1507.¹

¹ S. Lane-Poole (BMCOr 7, pp. xxvii-xlii and pp. 4-102, and 10, pp. 141-63) still provides the most comprehensive treatment of this material to date. More recently, Stephen Album has worked extensively on the topic of Timurid coinage, but much of his research remains unpublished. I am grateful for having had the opportunity to read certain of Mr. Album's unpublished material. There are also a number of excellent articles and monographs by the Soviet scholar E. A. Davidovitch, which directly or indirectly treat Timurid coinage, especially the copper issues and primarily from the perspective of economic history.

In the present context "Iran" refers not to the modern country of that name, but to the larger geographical entity of medieval times, which may perhaps be called



An epigraphic study may therefore elucidate much needed information about this material. While metrology has established a standard weight for the early Timurid silver issues and has provided evidence of subsequent coinage reforms,² epigraphic analysis may determine whether and when the inscriptions themselves were subjected to stylistic standardization. A change or variation in the form of an inscription may likewise corroborate the evidence of a coinage reform. The mint names and dates are frequently lacking on Timurid coins, yet the style of an inscription may itself allow for attributing an issue to a particular mint or for establishing a chronological sequence among one ruler's issues. Finally, an epigraphic study provides a significant means of viewing the coinage within the material context of the Timurid period.

The Timurid dynasty is well known for its patronage of the arts of the book, including calligraphy. A comparative wealth of information is preserved from this period, not only in the actual examples of calligraphy, but in texts pertaining to the calligraphers themselves.³ In view of the great sponsorship of and interest in the art of writing under the Timurids, it is important to look toward contemporary calligraphy as a possible source for the development of the epigraphic style of Timurid coins.

For the present study, which was initially undertaken at the American Numismatic Society and which subsequently encompassed the collections of the State Hermitage, the British Museum and the Ashmolean Museum,

Greater Iran: it includes parts of Transcaucasia, Central Asia, and Mesopotamia, as well as modern Iran and Afghanistan.

- ² See S. Album, "A Hoard of Silver Coins from the Time of Iskandar Qarā-Qoyūn-lū," NC 1976, pp. 113-18.
- ³ For example, Calligraphers and Painters: A Treatise by Qāḍi Aḥmad, Son of Mir Munshi (circa A. H. 1015/A.D. 1606), trans. V. Minorsky, Freer Gallery of Art Occasional Papers, vol. 3, no. 2 (Washington, 1959), which, although written at the beginning of the seventeenth century, contains a wealth of data about the art of writing and its practitioners in the fifteenth and sixteenth centuries, while Muḥammad Ḥaydar's Tārikh-i Rashidi (completed 1524) in M. Shafī, ed., "Iqtibās az Tārikh-i Rashidī," Oriental College Magazine 10, 3 (Lahore, 1934), pp. 150-70, is a more contemporary source that likewise provides reference to fifteenth and early sixteenth century calligraphers who were attached to the Timurid court, see especially pp. 161-65. Also see P. Soucek, "The Arts of Calligraphy," in B. Gray, ed., The Arts of the Book in Central Asia (Boulder, 1980), pp. 7-34, for a study of calligraphy and calligraphers in the Timurid period.



I have concentrated on the silver issues from the mints of Samarqand and Herat.⁴ This choice was dictated by several concerns. Foremost among them were the importance of these two cities throughout the Timurid period and the prodigious output of their mints. Samarqand, in Transoxiana, and Herat, in Khorasan, were the first and the last Timurid capitals, while the eastern regions of Transoxiana and Khorasan were also, respectively, the first and the last territories controlled by this dynasty. The coins struck at Samarqand and Herat therefore represent a virtually uninterrupted sequence of Timurid issues.

Another significant factor in this study was that of available material. The collections of the American Numismatic Society, the State Hermitage, the British Museum, and the Ashmolean Museum each include a comparatively large and representative sampling of Timurid silver issues from Samarqand and Herat, which together comprise nearly 300 coins. These, along with a more limited number of published examples, provided an excellent basis for an epigraphic survey. A study of the remaining eastern mints, as well as certain western mints is still in progress. This is expected to provide a more complete picture of the development and style of Timurid numismatic inscriptions. The following discussion is therefore intended as a work in progress.

The inscriptions on Timurid coins are fairly uniform in content. The obverse almost invariably includes the Muslim profession of faith, "There is no God but Allāh, Muḥammad is the messenger of God," which

4 This study was initiated during my participation in the 1980 Graduate Seminar of the American Numismatic Society. I would like to thank Michael Bates of the ANS for his advice and encouragement. I would also like to gratefully acknowledge the kind assistance of Marina Borisovna Severova of the State Hermitage, Nicholas Lowick of the British Museum, and H. W. Brown of the Ashmolean Museum during my research visits to their respective museums.

Although both silver and copper coins were issued throughout the Timurid period, I have not considered the copper coins within the present study. In contrast to the silver coinage, Timurid copper issues generally bear relatively crude inscriptions. This apparent lack of concern with the legibility and aesthetics of the inscriptions on copper coins may in itself have some significance but, in any case, renders the study of the epigraphic style of these coins implausible.



is generally surrounded by the names of the four Orthodox Caliphs.⁵ On the reverse, the legend includes the name and titles of the particular ruler; this is often followed by the benedictory phrase "May God perpetuate his sovereignty and his authority." The mint and date are most commonly inscribed on the reverse.⁶ For the most part, the inscriptions are in Arabic, although both Persian and Turkish words or phrases also occur.⁷ The rectilinear kufic script is generally maintained for the obverse legend until late in the Timurid period, when a cursive script becomes more common. The reverse legend is written in a cursive script, at first naskh, and later thulth.

The methodology employed in this study called for the numismatic inscriptions to be transcribed onto charts.⁸ These charts were arranged according to the letters of the Arabic alphabet, which has nineteen basic letter forms if the $l\bar{a}m$ - $al\bar{i}f$ ligature is included (in Arabic orthography all of the letters of a particular word are joined together, with the exceptions of $al\bar{i}f$, $d\bar{a}l$, $dh\bar{a}l$, $r\bar{a}$ and $z\bar{a}$). Then the text of each inscription was broken down into its component letter forms and plotted onto the charts,

- ⁵ Exceptionally, certain coins of Ḥusayn Bāyqarā from the mint of Astarabad include the Shi'i profession of faith, which concludes with the phrase "...'Alī is the walī of God." See ANS, 1959.235.3 (no date).
- ⁶ On earlier issues of Timūr, i.e. Plate 37, 1 and 2, the mint and date are on the obverse.
- ⁷ The Persian phrase beh būd literally "it was good" (perhaps indicating that the coin is legal tender) is inscribed on the coins of Ḥusayn Bāyqarā; while the Turkish phrase Timūr Kūrkān himmati-din Ulugh Beg Kūrkān sözüm, "with protection from Tīmūr Kūrkān, my (our) word" is inscribed on Ulugh Beg's coinage. On the latter reading see V. V. Barthold, Four Studies on the History of Central Asia 3: Ulugh Beg, trans. V. Minorsky and T. Minorsky (Leiden, 1963), p. 178; hereafter cited as Barthold.
- ⁸ Such a methodology was first devised and employed by Flury in his analysis of the inscriptions from the eleventh century tomb tower at Radkan in northeastern Iran, see S. Flury, "Bandeaux Ornementés à Inscriptions Arabes Amida-Diabekr x1° siècle," Syria 2 (1921), pp. 54-62. This particular methodology is, perhaps, best suited to working with ornamental kufic inscriptions, such as the inscriptions from Radkan. This system provides a very effective means of identifying the manner in which the various kufic letter forms are written and decoratively transformed. In contrast to the kufic script, the distinctive features of a cursive script are provided by the particular proportions of the letters and their relationship to one another, so that a somewhat revised version of Flury's system was used for the cursive inscriptions included in the present study.



distinguishing between obverse and reverse inscriptions. Certain commonly occurring words, such as Allāh and Muḥammad, were transcribed onto the charts in their entirety. Not only did such charts facilitate the comparative study of the individual inscriptions, but they also served to graphically illustrate the similarities and differences in the epigraphic styles of Samarqand and Herat. Rather than document or discuss every inscription that was analyzed, I will highlight the results in order to demonstrate some of the uses to which such a study can be put and the interpretations that it may suggest.

The earliest Timurid issues from Samarqand are those jointly struck in the names of Tīmūr, the founder of this dynasty (771–807), and Suyūrghatmish, the Chaghatayid Khān (771–90). Although Tīmūr had usurped control of Transoxiana from the Chaghatay in 771, the name of the nominal Chaghatayid ruler, first Suyūrghatmish, followed by his son Maḥmūd, appears to have been maintained in the silver coinage throughout Tīmūr's reign. Silver coins issued at the mint of Samarqand were struck at a standard of 1.5 g at least through 807, the year of Tīmūr's death. This survey includes 60 of Tīmūr and Suyūrghatmish's Samarqand issues. Of these, 52 are dated to the years 782–86, while the remain-



There is some discrepancy as to the exact chronological span of Timur and Manmud's issues. For example, in certain publications the cut-off date for such coins is given as 800 H., after which only Timur's name is said to be included in the inscriptions). See M. Mitchener, The World of Islam: Oriental Coins and Their Values (London, 1977), nos. 276 and 277; hereafter cited as Mitchener. While Album has noted that in 806, one year after Mahmūd's death, Timūr removed Mahmūd's name from the coinage and thereafter issued coins in this own name only; see "A Further Note on Tamerlane and Babur," NI 14, 7 (July 1980), p. 210, and (above, n. 2), pp. 115-16. However, the fact that there are silver coins from the mint of Samarqand jointly struck in the names of Timur and Mahmud and which are dated 807 indicates that Mahmūd's name must have been retained in at least certain silver coinage up until Timūr's own death in that same year. For an issue of 807, see E. A. Davidovitch, Klady Drevnikh i Srednevekovykh Monet Tadzhistana (Moscow, 1979), pl. 15, 4; hereafter cited as Davidovitch. I am not aware of any silver coins from either of the mints of Herat or Samargand that were clearly struck in the name of Timur alone. Certain copper issues from Samargand, however, bear only the name of Timur; see Mitchener nos. 1895 and 1896.

¹⁰ Larger and significantly heavier coins were also apparently struck at Samarqand prior to Timūr's death, for example an undated issue of Timūr and Suyūrghatmish in the Hermitage (30848) weighs 9.22 g.

ing examples are undated.¹¹ All of these coins conform to the same type; there are virtually no variations in their epigraphic style.

Obv.: Within dotted square, en-

closed by dotted circle lā ilāha illā Allāh

Muḥammad rasūl Allāh

Margin

darb Samargand

Rev.: Within polylobe or plain

circle

Suyürghatimish yarlighī Amīr Tīmūr Kūrkān Uge

manū (?)12

On the obverse, the central legend is written in kufic (Plate 37, 1). As on each of these coins, the ligature of the $m\bar{\imath}m-\hbar\bar{a}$ of Muḥammad is very stylized in form. The tail of the letter $w\bar{a}w$ of the word $ras\bar{u}l$ is ascending, terminating in a small spiral, while the $r\bar{a}$ and $l\bar{a}m$ of the same word are always placed in isolated fashion at the center of the inscription. The form of the letter $l\bar{a}m$ is unusual in that it is written like the isolated form of the letter $t\bar{a}$. In the margins, the mint designation is inscribed in a thick, somewhat crude naskh. The reverse legend is always written in a short, thick naskh (Plate 37, 1).

Coins struck at Samarqand in the names of Tīmūr and Maḥmūd represent several epigraphic styles and types. One hundred and fourteen examples were analyzed, ranging in date from 791-807 H.¹³ It was found that the epigraphic style of the earliest issues, from 791-95, is virtually identical with that of the preceding examples of Tīmūr and Suyūrghatmish. There are only slight variations in the arrangement of the obverse legend for the issues dating to the years 791-94 in so far as these coins include the mint designation, written in a thick naskh, and the date at the bottom of the legend. For the issues of 795, however, only the date



¹¹ These coins are in the following collections: Hermitage, 34; BM, 11; ANS, 6; Oxford, 6. Published examples: Mitchener, 2, 1884-85; Davidovitch, 1 (pl. 15, 1).

¹² Yarlighi, Turkish for "By order of (Amir Timūr...)"; Uge manū, Mongol (?) for "my word." On the latter see Barthold, p. 178; for a different reading, see BMCOr 7, p. xxix.

¹⁸ The location of these pieces is: Hermitage, 52; BM, 24; ANS, 16; Oxford, 15. Published examples: Mitchener, 3 (1891-93); Davidovitch, 3 (pl. 15, 2-4); S. J. T. Tabāṭabā'ī, 1 (Sikkehā'i Shāhān-i Islāmi Irān, 2 [1975]), p. 128.

is included at the bottom, while the mint name is written in the margins as on the coins of Tīmūr and Suyūrghatmish.

Issues of 791-95 H.

Obv.: Within plain square sur-

Rev.: Enclosed within polylobe

rounded by dots

lā ilāha illā Allāh Sultān Maḥmūd

Muḥammad rasūl yarlighī

Allāh Amīr Tīmūr Kūrkān Uge manū (?)

[darb Samarqand]

A comparison of the obverse of Tīmūr and Maḥmud's issue of 795 (Plate 37, 2) with one of Tīmūr and Suyūrghatmish's coins (Plate 37, 1) illustrates their identical epigraphic style. In the example dated 795 we again find the ascending tail of the $w\bar{a}w$ ending in a spiral, as well as the same particularized form of the $m\bar{i}m$ - $h\bar{a}$ ', along with the foliated terminal of the $r\bar{a}$ ', and the unusual form of the $l\bar{a}m$. Furthermore, the $r\bar{a}$ ' and the $l\bar{a}m$ are again placed in isolated fashion at the center of the legend. It should also be noted that the $l\bar{a}m$ - $al\bar{i}f$ ligature in $l\bar{a}$ ' and $il\bar{a}ha$ are identical for both issues. In each instance the short vertical mark included above the $h\bar{a}$ ' of $il\bar{a}ha$ is probably to be read as the initial $al\bar{i}f$ of the word $ill\bar{a}$.

A series of three dots is frequently placed in the center of the legend on the reverse of Tīmūr and Maḥmūd's coins; the legend is written in a short, thick naskh that is identical to the naskh script from the reverse of Tīmūr and Suyūrghatmish's issues.¹⁴ The strong stylistic parallels between the inscriptions of Tīmūr and Suyūrghatmish's coinage and those of the early issues of Tīmūr and Maḥmūd, for both obverse and



¹⁴ Certain issues of 791 exhibit a somewhat divergent naskh script in which the letters are thinner and occasionally elongated. It should also be noted that in certain issues of 791–95 the letter nān of Sulļān is written above this word so that it bisects the letter lām, see below, pp. 228–29). On the possible significance of the three dots in Timūr's coinage, see Ruy Gonzalez de Clavijo, Embassy to Tamerlane, 1403–1406, trans. Guy Le Strange (London, 1928), p. 208. This device also occurs on the coins of Timūr's grandson Ulugh Beg, see Barthold, p. 178.

reverse, suggest that the same epigraphic model was followed at the mint of Samarqand for each of these issues.¹⁵

Subsequent to 795 there is a great divergence in epigraphic styles among the Samarqand issues. There are further intrusions of naskh in the obverse legend and the obverse legend of the issues from 800 to 802 is written entirely in a thin, elongated naskh; the reverse legend is likewise inscribed in the identical script (Plate 37, 3).

In 785 the Kart dynasty of Herat was deposed, and that city came under Timurid suzereignty. According to Album, a silver coin struck at a standard of 6.15 g, the Timurid tanka, was first introduced at Herat shortly before 790.16 Following Timūr's conquest of Iran, this same silver coin was introduced in the territories newly incorporated within the expanding Timurid empire; the Samarqand mint seems to have remained an exception to this.17

The earliest Timurid issues from Herat are those jointly struck in the names of Timūr and Maḥmūd. Of the 25 examples considered here, only six are dated: specimens from 793 to 95 and from 803 and 804. These coins reflect a variety of types and epigraphic styles; for the most part, their inscriptions do not seem to have been influenced by the coinage of the Kart dynasty.

The most common obverse type among Tīmūr and Maḥmūd's Herat issues is one in which the central legend is enclosed within a dotted square that is surrounded by a pointed quatrefoil. The profession of faith is rendered in a simple kufic script and is written in concentric fashion.



¹⁵ This close relationship is in fact clearly illustrated by a coin in Oxford (ex Thornburn, 1966; 1.593 g) with a reverse of Timūr and Maḥmūd, but with an earlier obverse (of Timūr and Suyūrghatmish) dated 784. It is possible that the first issues of Timūr and Maḥmūd utilized such earlier obverse dies, but with a new reverse die, while from 791–95 the obverse die shows only a minimal change, and it is probably not until after 795 that a different obverse and reverse die were devised.

¹⁶ S. Album, "The Iranian Monetary System of the 14th Century: A Preliminary Discussion," (unpubl. ms.), p. 8, and (above, n. 2), p. 115, n. 9

¹⁷ I.e., at a standard of 1.5 g., but see above, n. 10.

¹⁸ A coin in the BM (1968.7.31.1) of Timūr and Suyūrghatmish which lacks both mint and date is, however, nearly identical to a Kart issue from Herat of 782 (ANS 1968.212.5), so it is possible that the former coin may be one of the earliest Timurid issues from Herat.

¹⁹ These coins are in the Hermitage, 7; BM, 8; ANS, 10.

The names of the four Orthodox Caliphs, inscribed in a thick, somewhat crude naskh, fill the margins (Plate 37, 4).

Among these same issues, the reverse types show a greater variety, while their inscriptions include several different naskh scripts. A similar lack of uniformity in both type and epigraphic style seems to have been prevalent at this time throughout the various Timurid mints.

One particular issue that shares a common epigraphic style and type may, perhaps, be specifically linked with the mint of Herat. I am aware of eleven such coins, of which only six bear the designation Herat; none of these coins preserve an entirely legible date.²⁰

Obv.: Within plain circle surrounded by dots, enclosed within circle lā ilāha illā Allāh Muḥammad rasūl Allāh Margin Abū Bakr / 'Umar / 'Uthmān

ʻAlī

Rev.: Within five circles arranged in oval al-Sulṭān / al-A'zam / Maḥmūd Khān / al-Amīr Mu'azzam [sic] / Tīmūr Kūrkān

On the obverse (Plate 37, 5), the legend is inscribed in a slightly foliated kufic script; the terminals of the letter $d\bar{a}l$ of Muḥammad are foliated and there is a foliate-like device above the $h\bar{a}$ of $il\bar{a}ha$. The letter $h\bar{a}$ of Muḥammad is always carried across the top of the word to the right. The marginal legend is inscribed in naskh.

In every example the reverse legend is written in the same distinctive naskh (Plate 37, 5). The decorative elements of certain of the letters are at times more suggestive of kufic, rather than of a cursive script. Invariably, there is a final flourish on the descending tail of the $m\bar{t}m$ of al-A'zam; the form and angle of the $al\bar{t}f$ - $l\bar{a}m$ - $al\bar{t}f$ ligature of this word is always rendered in the same manner. The ligature of the $w\bar{a}w$ and the $r\bar{a}$ ' of $T\bar{t}m\bar{u}r$, with the ascending tail of the $r\bar{a}$ ', is also distinctive, as these letters are not normally linked. The $s\bar{t}n$ of al- $Sul\bar{t}a\bar{t}n$ is consistently, though not exceptionally for $T\bar{t}murid$ coins, written as a single curved line.



²⁰ Five coins without the mint designation Herat: ANS, 4; BM, 1.

As was already indicated, only six of these coins include the mint designation Herat. This is written in the pentagonal space at the center of the reverse, where the word Herat is surrounded by three dots. On the remaining five coins, the three dots alone fill the central space (Plate 37, 6). These five coins show one further variation in that their reverse legend is written facing inward, rather than outward as on the six examples bearing the designation Herat. Nevertheless, the epigraphic style of each of the 11 coins is virtually identical for both obverse and reverse legends (compare Plate 37, 5 and 6). The specific nuances of the naskh inscription of the reverse are almost as particularized as an individual's handwriting, so that all of these coins would seem to be the work of a single die engraver, or else the die engraver, in each instance, closely followed the same epigraphic model. It can therefore be proposed that the five coins without the designation Herat were likewise struck at this mint.

Following Tīmūr's death in 807, his grandson Khalīl Sulṭān briefly held control over Samarqand. Certain of Khalīl Sulṭān's issues from the year 806 (Plate 37, 7) show a reversion to the obverse epigraphic style of Tīmūr and Suyūrghatmish's coins from this mint, as well as Tīmūr and Maḥmūd's early issues from Samarqand.²¹

Shāh Rukh, son of Tīmūr, succeeded his father at Herat in 807 and, by 812, he had also gained possession of Samarqand. Shāh Rukh's earliest issues from Herat are relatively rare; the scarcity of these coins is perhaps attributable to two later reforms in the weight standard. I have seen only four of Shāh Rukh's early Herat issues, which are dated either 807 or 809 H.; they were struck at Tīmūr's standard of 6.15 g.²² Each of these four coins conforms to a single type and epigraphic style (Plate 37, 8). The kufic inscription from the obverse maintains several features of the previously described Herat issues of Tīmūr and Maḥmūd (Plate 37, 5). On the reverse, the legend is written in a thick, very regular naskh; the mint and date are contained within a circle at the center, which is surrounded by the legend: al-Sulṭān al-A'zam Shāh Rukh Ba-hādur khallada Allāh ta'ālā mulkahu wa sulṭānahu. Coins of this type



²¹ These were jointly struck in the names of Khalil Sultān and Muḥammad Jihān-gīr, and the 21 coins studied are in the Hermitage, 15; BM, 3; ANS, 3.

²² Issues of 807 are in the BM and ANS; issues of 809 are in the Hermitage and BM.

may have been struck at Herat until 812, when Shāh Rukh's coinage began to be struck at a standard of approximately 5.5 g. The reverse type of these pre-reform coins is very probably based upon certain of Tīmūr and Maḥmūd's Herat issues, as there is virtually no difference, apart from the text of the legend, between the reverse of a Herat issue of 804 and that of 807 or 809.23

By at least 812 and in accordance with the first of Shāh Rukh's coinage reforms postulated by Album,²⁴ both the type and epigraphic style of Shāh Rukh's Herat issues show a distinct change. Coins struck at Herat from 812 until at least 823 conform to a single type and epigraphic style. Six such coins were included within this survey.²⁵

Obv.: Within plain square, surrounded by plain, then dotted circle
lā ilāha illā
Allāh Muḥammad
rasūl Allāh
Margin
Abū Bakr / 'Umar / 'Uthmān /
'Alī

Within plain circle surrounded by dots al-Sulţān al-A'zam Amīr Shāh Rukh Bahādur khallada Allāh mulkahu wa khilāfatahu

The central obverse legend is inscribed in a distinctive kufic script in which the terminals of the letters are generally foliated and the $m\bar{\imath}m-\hbar\bar{a}$ of Muḥammad is always written in the same particular manner as two inward facing loops (Plate 37, 9). The $h\bar{a}$ of $il\bar{a}ha$, with a foliate-like form at the top, is likewise consistent.



²³ Issues of 804, Hermitage 30919-20, while the reverse of an issue of 803 (ANS 1962.127.33) is likewise comparable.

²⁴ Album (above, n. 2), pp. 113 and 115, n. 9, although the author places the date of the first reform at 809 or 810. The two issues of 809 known to me (above, n. 22) were both obviously struck at the heavier standard of 6.15 g. The earliest dated coin that I have seen with this new type and epigraphic style and lighter weight is from 812, while the latest is from the year 823; both are from a hoard excavated at Daquq, in Iraq; see W. al-Rubay'i, "Excavations at Daquq," Sumer 12, 2 (1956), pp. 65–89, 64–65 (hereafter cited as al-Rubay'i) for the issues of 812 and 823, respectively, both from Herat.

²⁵ ANS, 2; BM, 2. Published examples: al-Rubay'i, 2 (64-65).

The reverse legend is written in a thick, well-proportioned naskh (Plate 37, 9). There are interlace devices on either side of the words darb and Herat. The substitution of the phrase his caliphate (khilāfatahu) for his authority (sulṭānahu) is unusual and perhaps has wider implications; this same substitution occurs on certain other coins of Shāh Rukh struck at various mints between the years 812 and 823, but not apparently after 827.26

Shāh Rukh's Samarqand issues demonstrate several interesting parallels with his Herat issues. Fifty-two coins from the Samarqand mint were studied ranging in date from 811-50.27 All conform to the same epigraphic style and type (Plate 37, 10) and all are virtually identical to the previously described Herat issues of 812-23. The kufic inscription of the obverse closely follows that of the Herat issues, for example in the particularized rendition of the $m\bar{t}m-h\bar{a}$ of Muhammad, and in the $h\bar{a}$ of $il\bar{a}ha$ with the foliate-like device above this letter. Both the epigraphic style and the type of the reverse are again parallel to the Herat issues, including the interlace devices. The reverse legend of the Samarqand issues, however, never seems to include the word "caliphate."

This epigraphic style and type was maintained at Samarqand throughout Shāh Rukh's long reign (d. 850). It is possible that this coin was introduced jointly at Herat and Samarqand in 812, the first year that Shāh Rukh held control over both cities and the year of his first coinage reform.

Album has postulated a second major coinage reform in 827 when Shāh Rukh's silver coins began to be struck at a standard of 5.1 g.²⁸ The present epigraphic study supports the evidence of this devaluation. Coins struck at Herat from 827 onward show a clear break with Shāh



²⁶ The substitution of the phrase *khilāfalahu* for *sulṭānahu* is noted and briefly discussed by Album (above, n. 2), pp. 117–18; however, the two coins from the Daquq hoard (above, n. 24) also include *khilāfatahu* in their reverse legend so that Album's cut-off dates for the use of this word need to be revised to include the years 812–23. Within the same time frame, this phrase likewise occurs on a coin from the mint of Abarku dated 821 (*BMCOr* 10, 59).

²⁷ Hermitage, 24; BM, 13; ANS, 9; Oxford, 1. Published examples: Mitchener, 5 (1921-25).

²⁸ Album (above, n. 2), p. 115, n. 9.

Rukh's earlier issues from this mint. Of the fifty-one coins surveyed, all represent the same basic epigraphic style and type.²⁹

Obv.: Within square, within point- Rev.: Within wavy circle, within ed quatrefoil; enclosed by plain, then dotted circle

plain, then dotted circle darb

lā ilāha illā al-Sulṭān al-A'zam

Allāh Muḥammad Shāh Rukh Bahādur khal-

rasūl Allāh lada Allāh

Margins mulkahu wa sultanahu

Abū Bakr / 'Umar / 'Uthmān / Herat

'Alī

The kufic script of the central obverse legend includes several distinctive features (Plate 37, 11). In contrast to the obverse inscription of the Herat issues of 812-23, as well as those of Samarqand through the year 850, the terminal of the letter $l\bar{a}m$ of $il\bar{a}ha$ is carried across the top of the word to the left, while the $h\bar{a}$ of Muhammad is rendered as a diagonal line, extending downward to the right. The terminals of the letters are rarely split, as was previously the case. The marginal legend is inscribed in naskh.

The reverse inscription is written in a clear, somewhat thick naskh (Plate 37, 11). The proportions of this script are similar to those of the earlier Herat issues; however, the interlace devices are lacking among the later issues.

Both the specific epigraphic style and type represented by Shāh Rukh's Herat issues beginning in 827 also became common at certain other eastern Iranian mints such as Sabzawar and Balkh (Plate 38, 12), as well as more briefly at western mints such as Tabriz and Shiraz.³⁰ It would appear that the coinage reform of 827, which introduced the standard



²⁹ Hermitage, 20; ANS, 11; BM, 10; Oxford, 6. Published examples: Mitchener, 2 (1905–6); Ţabāṭabā'ī, 2 (above, n. 13), 1, p. 60.

³⁰ Certain issues from other eastern Iranian mints such as Seman and Abarku also closely conform to the post-reform Herat issues; from further west, two coins from the mint of Isfahan, both dated 829, likewise follow this same model. (Examples of all of these coins are in the Hermitage, i.e., 24938; 24937 and 24966; 24967.)

weight of 5.1 g, also brought with it to Herat and to several other mints (though not Samarqand) a common epigraphic style and type.³¹

The extreme consistency in the features of the obverse kufic inscription and in the proportions of the reverse naskh inscription of Shāh Rukh's issues of 827 onward suggest that a new epigraphic model was introduced at this mint. The close correspondence of the inscriptions of these Herat issues with those of certain other contemporary mints indicates that the model employed at Herat was widely circulated.³²

Ulugh Beg, son of Shāh Rukh, succeeded his father at Samarqand in 850 and at Herat in the following year. Coins struck in Ulugh Beg's name at these mints share the same epigraphic style and type. I am aware of seven such coins.³³

Obv.: Within square, within pointed quatrefoil, enclosed by plain, then dotted circle (basic post-reform Shāh Rukh type) lā ilāha illā Allāh Muḥammad rāsul Allāh Margin Abū Bakr / 'Umar / 'Uthmān / 'Alī

Rev.: Within wavy circle, enclosed by plain, then dotted circle
Timūr Kūrkān himmatī-din
Ulugh Beg Kūrkān sözüm
(sozümiz)34

The kufic script of the central obverse legend is similar to, but not identical with Shāh Rukh's Samarqand issues in terms of the rendition of the $m\bar{\imath}m-\hbar\bar{a}$ of Muhammad, although in this instance these letters are



³¹ On the other hand, I am aware of a coin from the mint of Nimruz, dated 828 (Hermitage 24954), that is identical in style and type to the Samarqand issues.

³² That some type of written model, rather than the die itself, was circulated to other mints is suggested by the fact that certain coins from the mints of Sabzawar, Seman, and Khwarazm (i.e., Hermitage 24942), which otherwise conform to the post-reform Herat type, show slight variations, for instance in terms of the thickness or thinness of the letters.

³³ Hermitage, 2-Herat, 1-Samarqand; ANS, 1-Samarqand; BM, 2-Herat, 1-Samarqand.

³⁴ On this text, see above, n. 7.

written as a single loop, rather than two inward facing loops (Plate 38, 13). However, the inscription likewise corresponds to Shāh Rukh's post-reform Herat issues, as it includes the overlapping $l\bar{a}m$ of $il\bar{a}ha$, which characterizes the latter coins. In the reverse legend (Plate 38, 13), the proportions of the naskh script are somewhat thinner and more elongated than previous issues from Herat and Samarqand.

During the decade following Ulugh Beg's death in 853, Samarqand (Transoxiana) and Herat (Khorasan) were ruled by different branches of the Timurid dynasty. For the most part, however, there are only slight variations in the coinage of these two mints at this time.

'Abd al-Laṭīf, son of Ulugh Beg, followed his father at Samarqand, reigning briefly from 853-54. Five of 'Abd al-Laṭīf's issues from this mint were analyzed; these coins, which represent both regnal years, conform to a single type and epigraphic style.³⁵

Obv.: Within looped square, surrounded by plain, then dotted circle lā ilāha illā

Allāh Muhammad

rasūl Allāh

Margin Abū Bakr al-Ṣādiq / 'Umar

al-Fārūq

'Uthman Dhu al-Nurayn /

'Alī al-Murtadā

Rev.: Within plain, then dotted

circle ḍarb

al-Sulțān al-A'zam

'Abd al-Laṭīf Bahādur bin Shāh Rukh Bahādur bin

Tīmūr Kūrkān Samargand

The central kufic inscription of the obverse, like that of the preceding issues of Ulugh Beg, combines elements of Shāh Rukh's Samarqand and post-reform Herat issues (Plate 38, 14). Here, however, these "borrowings" are much closer to the original model: namely, the $m\bar{t}m-h\bar{a}$ of Muḥammad is written in the identical fashion as on Shāh Rukh's previously described Samarqand issues, while the $l\bar{a}m$ of $il\bar{a}ha$ is extended at the top, to the left, as on Shāh Rukh's post-reform coinage from Herat.



²⁵ ANS, 1-coin, 1-cast; Hermitage, 1. Published examples: Mitchener, 1 (1946); Davidovitch, 1 (pl. 16, 5).

The naskh script of the marginal legend is very similar to the naskh inscriptions of Ulugh Beg's issues, as in the thin naskh inscription of the reverse.

'Abd al-Laṭīf was succeeded at Samarqand by 'Abdallāh, who reigned from 854-55 H. Nine of 'Abdallāh's Samarqand issues were considered in this study, which include both regnal years and represent two different obverse types. The two obverse types, one is identical to that of 'Abd al-Laṭīf, while the other conforms to the standard type exemplified by Shāh Rukh's post-reform issues. Each of 'Abdallāh's obverse types, however, shares a nearly identical kufic inscription. Moreover, this kufic script closely parallels the obverse inscription of the preceding issues of 'Abd al-Laṭīf. Only one reverse type was noted, which is identical to the type on 'Abd al-Laṭīf's coins; the proportions of the naskh inscriptions are likewise very similar to those of 'Abd al-Lāṭīf.

From 853 to 861 Herat (Khorasan) was governed by Abū'l Qāsim Bābur. I have seen only four of this ruler's Herat issues; two of these are dated 854, while the dates are unreadable on the other two.³⁷ Each of these coins conforms to a single type and epigraphic style.

Obv.: Within looped square,
within pointed quatrefoil,
enclosed by plain, then
dotted circle
lā ilāha illā
Allāh Muḥammad
rasūl Allāh
Margin
Abū Bakr al-Ṣādiq / 'Umar
al-Fārūq / 'Uthmān Dhū
al-Nūrayn / 'Alī al-Murtaḍā

Rev.: Within a wavy circle, enclosed by a plain, then a dotted circle darb al-Sulțān al-A'zam Abū'l-Qāsim Bābur Bahādur Khān khallada Allāh mulkahu wa sultānahu



³⁶ British Museum, 3; Oxford, 1. Published examples: Ţabāṭabā'ī, 2 (above, n. 13), 2 (133-34); Davidovitch, 1 (p. 16, 6); Mitchener, 1 (1947); al-Rubay'ī, 1 (84).

³⁷ The dated examples are in the Hermitage and the British Museum. There is an undated example in the Ashmolean Museum, while the fourth undated coin is published in Tabāṭabā'i (above, n. 13), p. 136.

On the obverse (Plate 38, 15), the kufic script of the central legend is identical to that of the contemporary Samarqand issues of 'Abd al-Laṭīf and 'Abdallāh. The naskh inscription of the reverse is similar in its proportions to that of the Samarqand issues just noted, as well as to Shāh Rukh's post-reform issues from Herat. One of Abū'l-Qāsim's coins from the year 854 is notable in that the inscription includes a device above the word al-A'zam that is probably to be read as the hamza/fatḥa of that word. This same type of vocalization is invariably included in both the obverse and reverse inscriptions of subsequent issues from Herat struck in the name of Abū 'l-Qāsim's successor Abū Sa'īd.

Abū Sa'īd first came to power in Samarqand in 855 and by 868 Herat was also in his hands. Six of Abū Sa'īd's issues from the mint of Samarqand were included in this study; one is dated 861, another 862 (?), the third is dated 865, the fourth 87x, while on the remaining two examples the date is illegible.³⁸ These six coins represent four separate obverse types and three reverse types. In terms of their diverse epigraphic styles, the most interesting example is that of 87x, whose obverse central legend is inscribed in naskh, rather than the more usual kufic. Furthermore, the obverse type of this issue is one not previously known from the Timurid mint of Samarqand.

Issue dated 87x

Obv.: Within double looped quatrefoil, enclosed by plain then dotted circle lā ilāha illā Allāh Muḥammad rasūl Allāh Margin Abū Bakr al-Ṣādiq / 'Umar al-Fārūq / 'Uthmān Dhū al-Nūrayn / 'Alī al-Murtaḍā

Rev.: Within wavy, then plain, then dotted circle darb al-Sultān al-A'zam Sultān Abū Sa'īd Kūrkān khallada Allāh ta'ālā mulkahu wa sultānahu



³⁸ The issues of 861, 862 (?) and 87x are in the ANS, the two undated coins are in the British Museum, while the example dated 865 is published in Mitchener, no. 1948.

Both obverse and reverse legends (Plate 38, 16) are identical in terms of their proportions and particular nuances with the inscriptions from Abū Sa'īd's Herat issues, which will be described below. Furthermore, their obverse and reverse types show only very slight divergence from the Herat coinage. It is possible that, sometime after Abū Sa'īd's conquest of Herat in 868 and his subsequent transfer of the capital to that city, a standard type and epigraphic style were introduced at Herat and Samarqand, as well as at several other mints.

Six of Abū Sa'īd's issues from the mint of Herat were studied. All are dated between 864 and 868; five of these, one from the year 864, three dated 867, and another dated 868, conform to the identical type and epigraphic style, which is closely related to that of Abū Sa'īd's Samarqand issue of 87x. The one divergent issue is from the year 867.³⁹

Obv.: Within looped quatrefoil, enclosed by dotted circle lā ilāha illā Allāh Muḥammad rasūl Allāh Margin Abū Bakr al-Ṣādiq / 'Umar al-Fārūq / 'Uthmān Dhū al-Nūrayn / 'Alī al-Murtaḍā

Rev.: Within plain circle surrounded by dots
ḍarb
al-Sulṭān al-A'zam
Sulṭān Abū Sa'īd Kūrkān
khallada Allāh mulkahu wa
sulṭānahu Herat

Like the Samarqand issue of 87x, both the central and marginal obverse legend are rendered in the same clear and elegantly written naskh (Plate 38, 17). The particular proportions of this script do not show any variations; the vertical stems of the letters of the first line (center) and the final $l\bar{a}m$ and initial $al\bar{i}f$ of $ras\bar{u}l$ and $All\bar{u}h$ respectively, in the third line, are always elongated. A hamza/kasra is invariably written after the $l\bar{u}m-al\bar{i}f$ of $ill\bar{u}$, while a dot is always placed above the $h\bar{a}$ of $il\bar{u}ha$.

The following comments again apply to the Samarqand issue of 87x as well. On the reverse of the Herat coins the vertical stems of the naskh



³⁹ Two examples of 867 (one of them divergent) are in the Hermitage, along with the issue of 870; the coins dated 864 and 868 are in the ANS, while another issue of 867 is in the British Museum.

script are elongated, especially in the first line of the legend. A hamza/kasra is written above the 'ain of al-A'zam, probably to be read as the hamza/falḥa of this word (a similar device was already noted for one of Abū'l-Qāsim's Herat issues of 854). In the first and second lines of the inscription the nūn of al-Sulṭān is invariably written slightly above this word so that it occasionally intersects with the vertical letter lām of this same word. In the third line the nūn of al-Sulṭān is also written above, so that it bisects the letter lām, tā' and alīf. There is a similar, though less consistent tendency toward this use of intersecting letters among certain of Ulugh Beg's issues, as well as those of his immediate successors. We should perhaps view this use of intersecting letters as one means of embellishing a cursive inscription. The same juxtaposition of letters or complete words is commonly found among architectural inscriptions of the Timurid period, as well as in contemporary decorative arts.⁴⁰

As the specific proportions and nuances of the inscriptions from Abū Sa'īd's Herat issues and that of Samarqand dated 87x are identical, it would seem that the same epigraphic model was followed, though not always adhered to, at both mints. Coins of the same type as the four Herat issues and including the very same epigraphic style as that of Herat and Samarqand, as just described, were also struck in Abū Sa'īd's name at several other contemporary mints, such as Kashan, Astarabad and Shiraz, at least by the year 868.⁴¹ Again, it appears that the same epigraphic model was circulated among these mints.

Abū Sa'īd was succeeded at Samarqand by his son Aḥmad, who reigned from ca. 873-99. Nineteen of Aḥmad's Samarqand issues were ana-



⁴⁰ For example, the Masjid-i Gawhar Shad, in Mashhad, dated 821 H./A.D. 1481, see A. U. Pope, ed., A Survey of Persian Art (London and New York, 1939), vol. 4, pls. 428–29. This mannerism is not restricted to the architectural inscriptions of the Timurid period, but it occurs in monumental epigraphy of both a slightly earlier and later date. This same mannerism is also common in the inscriptions on metalwork beginning in the Timurid period, see L. Komaroff, "The Timurid Phase in Iranian Metalwork: Formulation and Realization of a Style," Ph.D. diss., New York University, 1984, pp. 313–314, nos. 3–5, 8, 12–13, 16, 23–24, 29–31, 35–38, 39–41, 43–50.

⁴¹ On certain of these issues the hamza/kasra is also written after the word al-Sullān and is perhaps to be read as the hamza/fatḥa from the definite article of this word.

lyzed.⁴² Of these, 16 conform to a single type and epigraphic style; these include dated specimens from the years 881, 889, and 897. The remaining three coins, two of which are dated 874 while the third is from the year 880, represent two further epigraphic styles and types. The issues of 881 onward may mark the introduction at Samarqand of a new epigraphic style and type, which perhaps coincides with a coinage reform.⁴³

The issues of 881-97

Obv.: Within square enclosed
within pointed quatrefoil
lā ilāha illā
Allāh Muḥammad
rasūl Allāh
Margin
Abū Bakr/'Umar/'Uthmān/

Rev.: Within plain circle surrounded by dots al-Sulţān al-A'zam Sulţān Aḥmad Kūrkān khallada Allāh ta'ālā mulkahu wa sulţānahu

The kufic script of the obverse central legend exhibits a number of particularized and seemingly archaic features (Plate 38, 18). The terminals of the letters are almost invariably foliated, while the terminals of the initial $al\bar{i}f$ of $ill\bar{a}$ are carried to the right so that they surround the final letter $h\bar{a}$ of the preceding word $il\bar{a}ha$. A decorative form is also given to the $m\bar{i}m-h\bar{a}$ of Muḥammad, as well as to the $h\bar{a}$ of Allāh in the second and third lines.

On the reverse (Plate 38, 18), the proportions of the naskh script are very similar to those of the reverse inscriptions of the previously described issues of Abū Sa'īd. There are, however, certain particular nuances of this naskh script that are common to each of Aḥmad's sixteen related coins. For example, the word Aḥmad is invariably written with the initial $al\bar{t}f$ attached to the following letter $h\bar{a}$ (this is orthographi-



⁴² Hermitage, 12; ANS, 6; Oxford, 1.

⁴⁸ The number of Ahmad's issues is insufficient for statistical conclusions, but it does suggest a standard weight of about 4.77 g for the 16 later issues of identical epigraphic style and type. Moreover, these weights are remarkably consistent. The three earliest coins are all somewhat heavier: 4.9, 5.0, and 5.1 g. This is, of course, too small a sampling to draw any conclusions but it does suggest that there may have been a coinage reform.

cally incorrect); furthermore, the letter $\hbar \bar{a}$ is written like the medial form of the letter 'ain.

Among the 16 issues of Ahmad just described, the epigraphic style is consistent for both obverse and reverse. It would therefore seem as though some type of epigraphic model was in use at the Samarqand mint, probably beginning in the year 881.

Following Aḥmad's death in 899, the throne was contested by several Timurid princes, among them Bāysonghur, who struck coins at Samarqand at least in the years 900 and 901.44 The obverse of certain of Bāysonghur's issues are identical in terms of type and epigraphic style to the coinage of Aḥmad, just described, so that perhaps for these issues the same epigraphic model was followed for the obverse die (Plate 38, 19).

Ḥusayn Bāyqarā reigned at Herat from 878-912; under his rule Herat became one of the most brilliant centers of art known to Islamic Iran. Many reknowned artists, calligraphers among them, enjoyed the patronage of this Timurid ruler. It is perhaps to be expected that the inscriptions on coins struck in Ḥusayn Bāyqarā's name should reflect a similar concern with artistic quality. Thirty-four of Ḥusayn Bāyqarā's Herat issues were examined; they represent a single type and epigraphic style.45

Obv.: Within looped octagon lā ilāha illā Allāh Muḥammad rasūl Allāh Margin Abū Bakr al-Ṣādiq/ʿUmar al-Fārūq/ʿUthmān Dhū al-Nūrayn/ʿAlī al-Murṭaḍā Within cartouche beh būd Herat⁴⁶

Rev. Within plain circle
al-Sulṭān al-A'zam
Abū Ghāzī Sulṭān Ḥusayn
Bāyqarā
khallada Allāh ta'ālā
mulkahu wa sulṭānahu



⁴⁴ Five examples were studied: ANS, 3; Hermitage, 1; BM, 1.

⁴⁵ Hermitage, 10; BM, 10; ANS, 7; Oxford, 2. Published examples: Tabāṭabā'ī, 3 (above, n. 13), pp. 135, 140-41; Mitchener, 2 (1965-66).

⁴⁶ On this phrase see above, n. 7. For a discussion of this and other possible interpretations of this phrase, see J. A. Pope, *Chinese Porcelains from the Ardebil Shrine* (Washington, 1956), pp. 53-54, especially n. 106.

Both the marginal and central legend of the obverse are written in a clear, well-proportioned cursive script, which may perhaps be identified as thulth (Plate 38, 20). One of the characteristics associated with the thulth, and which we find here, is the marked use of upward curving terminals.⁴⁷ The obverse inscriptions of these coins furthermore share a number of particularized features. The vertical shafts of the letters of the words lā, ilāha, and illā are all very much elongated, while the lām of Allāh in the first and second lines is comparatively short, approximately the size as the succeeding letter $h\bar{a}$. Furthermore, the isolated form of the letter $h\bar{a}$ is consistently placed above the final $h\bar{a}$ of Allāh in the first line and generally in the second line as well. The repetition of a letter in isolated form, either above or below the line, is frequently found in carefully written manuscripts throughout much of the Islamic period; it provides one means of distinguishing unpointed letters from pointed ones.⁴⁸ This same type of device very often occurs in Iranian architectural inscriptions at least from the fourteenth century onward, and it is also a common feature of the inscriptions on Timurid metalwork.49

On the reverse, the legend is again written in a script that may be identified as thulth (Plate 38, 20). The inscription is organized in a series of intersecting zones. That is, certain words or letters are written across the elongated vertical shafts of the letters of the words below. This feature has already been noted on Abū Sa'īd's coinage; however, in the later examples virtually the entire inscription is written in this manner. For example, the ligature of the 'ain- $z\bar{a}$ ' of al-A'zam is extended to the left, to bisect the elongated vertical shafts of the word al-Sultān. The horizontal stems of certain letters are also stressed, namely, the 'ain- $z\bar{a}$ ' of al-A'zam is extended to the left, to bisect the



⁴⁷ For a discussion of this and other cursive scripts from the perspective of contemporary descriptions of these scripts, see Soucek (above, n. 3), pp. 12–18.

⁴⁸ See W. Wright, A Grammar of the Arabic Language, 3rd ed. (Cambridge, 1975), p. 4. For the occurrence of the same device in a Timurid Qur'ān, see M. Lings, The Quranic Art of Calligraphy and Illumination (Boulder, 1978), pl. 85.

⁴⁹ For an example of this device in a Timurid architectural inscription, see Pope (above, n. 40), the Masjid-i Gawhar Shad, Mashhad, pl. 431 (above the hā' of Allāh). In Timurid metalwork, see A. A. Ivanov, "Mednaia chasha 811 g. Kh. (1408–1409 g) so stikhamu Khafiza," Soobshcheniia Gosudarstvennogo Érmitazha 19 (1960), p. 43.

elongated shafts of the word al-Sulṭān. As with the obverse legend, the proportions and nuances of the reverse inscriptions are virtually invariable. A similar system of dividing a thulth inscription into intersecting zones is often found among the architectural inscriptions of the Timurid period, as well as in contemporary metalwork. 50

The quality of these numismatic inscriptions, the great consistency in the juxtaposition of tall and short verticals, the inclusion of the isolated form of the letter $h\bar{a}$ ' on the obverse and, finally, the complicated use of intersecting letters and words on the reverse clearly indicate that some sort of model was provided for these inscriptions and, in this instance, by someone well versed in the art of writing. Moreover, the same style for both obverse and reverse inscriptions is also evident among the coins struck in Ḥusayn Bāyqarā's name at certain other Khorasanian mints such as Mashhad (Plate 38, 21), Balkh and Astarabad, suggesting that a common epigraphic model was followed for a time at each of these mints.

During the course of this epigraphic study two factors became increasingly apparent, and I have alluded to them throughout this discussion. First of all, the obverse and reverse inscriptions of the coins struck at Samarqand and Herat reflect a variety of very specific styles that can generally be associated with the coins of an individual ruler and which may be restricted to either Samarqand or Herat, or may be found not only at both mints, but at other contemporary mints as well. Second, the inscriptions are generally carefully written and are of a high quality; the decorative transformations of the kufic letters are effectively carried out, and the particular proportions of the cursive scripts are always consistent within a given inscription. The epigraphic styles of the Timurid coinage from Samarqand and Herat indicate, I believe, a concern both for uniformity and consistency, as well as for well written and distinctive inscriptions.

I have suggested that the particular style and consistency of the individual inscriptions may be attributable to the use of epigraphic models. Not only would this insure that the legend was properly engraved on the

50 Above, n. 40.



die but, perhaps of equal significance for this period, that the inscriptions would reflect a very specific and uniform style. Such epigraphic models would then be retained within the mint or else might be circulated among several mints.

If in fact epigraphic models were used, and the physical character and consistency of the inscriptions strongly suggests this, then the question must be posed as to how such models were provided. I believe that calligraphers were responsible for these epigraphic models. I have already noted that calligraphy was both a highly developed and an extremely valued art form in the Timurid period. Calligraphers were actively patronized by many of the Timurid rulers, foremost among them Ḥusayn Bāyqarā, whose reknowned atelier at Herat employed a number of prominent calligraphers.⁵¹

We know from Qāḍī Aḥmad's treatise on calligraphers and painters, written ca. 1015 H./A.D. 1606, that in the eighth, ninth, and tenth centuries calligraphers in Iran often fulfilled a variety of functions, one of which seems to have been the "designing" of architectural inscriptions, which are described as being made of carved stone or glazed tile. The Persian historian Khwāndamīr, writing in the tenth/sixteenth century, notes that a certain calligrapher known as Khwājah Mīrak Naqqāsh, who had been entrusted with the calligraphy of the repairs to the Jamī' mosque in Herat in 902 H./A.D. 1499, was so neglectful of his duties that he held up the work of the tile workers. While it is unclear as to how active a role the calligrapher played in the actual manufacture of the inscriptions, what is most apparent from the textual evidence is that calligraphers designed architectural inscriptions. That is, the calligrapher must have provided some sort of written specimen to serve as a



⁵¹ Minorsky (above, n. 3), pp. 44 and 102, for reference to two calligraphers who worked in Husayn Bāyqarā's atelier. Also see Soucek (above, n. 3), pp. 16–30, for reference to several calligraphers who were patronized by various members of the Timurid family.

⁵² Minorsky (above, n. 3), pp. 61–63, 72, 74–75, 102, 141, 143, 171–72.

⁵³ Quoted in L. Binyon, J. V. S. Wilkinson and B. Gray, *Persian Miniature Painting* (London and Oxford, 1933), p. 186, n. 2.

model for the inscriptions of a building.⁵⁴ The writing of architectural inscriptions seems, in fact, to have been an important aspect of the calligrapher's craft.⁵⁵

If then one of the functions of the calligrapher in Timurid Iran was to design inscriptions for buildings, it is not such a far remove, apart from the change in scale, for contemporary calligraphers to have designed numismatic inscriptions as well. I have already noted certain similarities between the reverse inscriptions of Abū Sa'id's and Ḥusayn Bāyqarā's coins and contemporary architectural inscriptions; this suggests some further correspondence between numismatic and monumental epigraphy and calligraphy.

To summarize, the individualized and uniform epigraphic styles which are evident among the various Timurid issues from Herat and Samarqand suggest that epigraphic models were at times followed at these mints. I have proposed that such models may have been provided by contemporary calligraphers, as seems to have been the case with architectural inscriptions. In further support of this thesis, in Mughal India during the reign of Akbar—a descendant of the house of Tīmūr—certain "calligrapher-engravers" were, according to one contemporary chronicle, responsible for the inscriptions on Akbar's gold coins.⁵⁶



⁵⁴ The method for producing such a model is described by A. Schimmel, Calligraphy and Islamic Culture (New York, 1984), p. 42: "... the calligrapher... would draw a model that was then fixed on the paper with fine needles, thus producing sequences of dots through which coal dust was usually rubbed for fine outlines...," also see n. 59 for reference to an Ottoman calligrapher whose small house could not accommodate the large models that he drew for inscriptions. I am aware of one such cartoon for an architectural inscription said to be from Tehran, eighteenth century(?) in the Chester Beatty Library, Dublin.

⁵⁵ Minorsky's discussion, cited above in n. 52. The signature of the "calligrapher" also seems to be preserved in certain architectural inscriptions. For two such Timurid inscriptions, both signed by Sayyid Maḥmūd-i Nāqqash and each referring to him as the one who wrote the inscription for the Masjid-i Jum'a, Isfahan, and the Masjid-i Jum'a, Varazana, see A. Hutt and L. Harrow, *Islamic Architecture Iran*, 2 (London, 1978), pls. 37 and 39.

⁵⁶ Abu'l Fazl 'Allami, A'in-i Akbari, vol. 1, trans. H. Blochmann (Calcutta, 1873), p. 27.

KEY TO PLATES

- 1. ANS, Timūr and Suyūrghatmish, Samarqand, 784
- 2. ANS, Tīmūr and Maḥmūd, Samarqand, 795
- 3. ANS, Timūr and Mahmūd, Samarqand, 801
- 4. ANS, Tīmūr and Maḥmūd, Herat, 793 (obv. only)
- Hermitage, Tīmūr and Maḥmūd, Herat, xxx
- 6. ANS, Tīmūr and Maḥmūd, Herat (?) xxx
- 7. ANS, Khalīl Sultān, Samarqand, 807
- 8. ANS, Shāh Rukh, Herat, 807
- 9. ANS, Shāh Rukh, Herat, before 827
- 10. ANS, Shāh Rukh, Samarqand, 830
- 11. ANS, Shāh Rukh, Herat, 828
- 12. ANS, Shāh Rukh, Balkh, 828
- 13. ANS, Ulugh Beg, Samarqand, 853.
- 14. ANS, 'Abd al-Latif, Samargand, 853
- 15. Hermitage, Abū 'l-Qāsim Bābur, Herat, 854
- 16. ANS, Abū Sa'īd, Samarqand, 87x
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- 18. ANS, Ahmad, Samarqand, xxx
- 19. ANS, Bāysonghur, Samarqand, xxx
- 20. ANS, Ḥusayn Bāyqarā, Herat, 895
- 21. ANS, Ḥusayn Bāyqarā, Mashhad, 909

ANSMN 31 (1986)

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THE ALBANY COMMITTEE OF CORRESPONDENCE'S PAPER MONEY

(Plate 39) Joseph R. Lasser

The two extremely small paper money issues of the Albany, New York, Committee of Correspondence are among the most provocative emissions of colonial America.¹ The Albany bills are unique in that they are the only known currency created by a colonial committee of correspondence, and the June 22, 1775, issue is one of two instances that an emission was backed only by the financial pledges of individuals.² Very early in the Revolutionary conflict, the Albany Committee was faced with the crucial and imminent problem of how to pay the nearby Hudson Valley troops. It responded immediately by the patriotic emission of personally guaranteed paper currency.

New York has often been mentioned as having the reputation of being the least enthusiastic colony for the American cause. However, basically, its population was divided among three political elements, each typically visible prior to the onset of hostilities: (a) a group which wished to remain within the British colonial system, (b) a segment which desired



¹ Eric P. Newman, Early Paper Money of America (Racine, Wisconsin, 1976), provides a broad and authoritative view of colonial and continental paper money.

² Newman (above, n. 1), p. 365. The other was the South Carolina issue with handwritten dates April 18, 1775, to May 23, 1775. This emission was backed by the personal guarantees of the members of the South Carolina Committee of Public Safety, an extra-legal body which succeeded to a portion of the activities of the South Carolina Committee of Correspondence upon the latter's termination.

a newly independent government, and (c) a component whose goal was accommodation only with a mild and liberal Crown policy.

The New York Provincial Assembly was controlled by the loyalist Tory element early in 1775 and, as a consequence, failed to support the formation of the Second Continental Congress and the Boston Committee of Correspondence. Within a few months, however, the local political climate swung rapidly toward independence. By May 22, 1775, the liberty oriented Provincial Congress had succeeded the Provincial Assembly and New York started down the path toward independence.

The Albany Committee of Correspondence which embraced between 17 and 19 districts of the county of Albany plus the three wards of the city of Albany, had been in existence for some time prior to New York's secession. The exact date of formation of that committee is not known but its first minutes are dated January 24, 1775. However, the then existing organization undoubtedly was preceded by another council chaired by Jacob Lansing which in August 1774 approved James Duane, Philip Livingston, Isaac Low and John Alsop Esq. (the New York city and county delegates) to represent the city and county of Albany at the First Continental Congress which assembled on September 6, 1774.

Initially, colonial committees of correspondence were involved only in raising and supplying troops. There was no intrusion on existing governmental functions until, within a very short time, the committees became wide ranging agencies acting as civilian support for revolutionary activities. They not only enlisted and drafted soldiers, but also arranged for equipment, training and military exemptions; they disciplined loyalists, supervised public health, controlled prices of food and clothing, superintended elections, maintained law and order, etc.

The Albany Committee quickly found itself in the most important strategic military theater of the early Revolution. The United Colonies recognized that British control of New York Colony, including, most significantly, the logistically crucial Hudson River Valley, could provide a primary avenue for British invasion and sever New England from the



³ James Sullivan, comp., Minutes of the Albany Committee of Correspondence 1775-1778, 2 vols. (Albany, 1923), 1, p. 5; hereafter cited as Minutes.

⁴ Minutes, 1, chapts. 4-5.

other colonies. Equally important, the patriots hoped to bring Canada into an independence orbit. Therefore, control of the Hudson leading to the lower St. Lawrence Valley was essential.

The Continental Congress and the patriots' major military strategies targeted the control of the Hudson Valley as one of their first goals and on May 10, 1775, Benedict Arnold and Ethan Allen took Fort Ticonderoga on the Albany Committee's doorstep. The committee responded immediately by providing troops and supplies but no financial arrangements had been developed to pay the soldiers or purchase provisions, with the result that on June 22, 1775, the Albany Committee undertook a unique action in the annals of the Revolution. It initiated an issue of paper money backed by the personal financial resources of its individual members.

The minutes of the committee describe the episode as follows.

On Motion

The Question being put whether or no it is necessary that some Money be raised to pay the Troops raised for the use of this Colony

Resolved in the Affirmative Nem: Con.

The Question being put what Sum should be raised.

Resolved that five hundred Pounds be raised

Then.

The Question being put whether the said Sum of five hundred Pounds be raised by Loan or by Bills of Credit.

Resolved That it be raised by Bills of Credit of the following Emission to wit.

Resolved That the Bills for the above Sum be of the following Tenor to wit.

Albany Committee Chamber June 22nd 1775. (No)



This Note shall entitle the bearer to the Sum of

New York Currency payable by us the Subscribers on or before the first day of September next pursuant to a Vote of Credit of the Sub-Committee of the City & County of Albany

By order of the said Committee

Resolved That Messrs. Jacob C. Ten Eyck, Jacob Lansingh Junr. and Samuel Stringer subscribe their respective Names to the several Notes to be issued as aforesaid and Number the same. And the respective Members of this Committee do hereby engage to save and keep harmless and idemnified the said Jacob C. Ten Eyck, Jacob Lansingh Junr. and Samuel Stringer for all Sums of Money which they or either of them may be compelled to pay in Consequence of their Signing the said Notes, exclusive of their Proportional Part as Members of this Committee. Farther —

Resolved That Messrs. Robert Yates, John Bay, Abraham Cuyler, Gosen Van Schaick, Cornelius Van Santvoordt, John Ten Broeck, Henry Quackenbush and Lucas Van Veghten, or any two of them Superintend the printing of said Bills.⁵

Four days later, on June 26, an additional £500 of notes were authorized, consisting of 250 twenty shilling bills and 125 forty shilling bills; also, Volkert P. Douw and Abraham Yates, Jr., were added to the authorized signers of bills on July 13 and July 22, 1775, respectively.

The need for the currency was virtually immediate. On July 11, 1775, five delegates of the Albany Committee were authorized as a subcommittee to "furnish General Philip Schuyler [the senior American officer for the district] with Such a Sum of Money of the Currency emitted by this Board, as the said [sub]Committee shall think proper." And only two days later a committeeman, Jeremiah Van Rensselaer was given £332 in Albany bills to pay the troops at Lake George, Crown Point (at the foot of Lake Champlain) and Ticonderoga. Cautiously, the



⁵ Minutes, 1, pp. 97-98.

⁶ Minutes, 1, p. 140.

committee stipulated that Van Renssalaer inform the soldiers that they must look to the Continental Congress or the Provincial Congress for any future compensation. By July 21, 1775, Van Rensselaer had returned to Albany and reported that he had carried out the committee's instructions.

General Schuyler quickly recognized the exceedingly fragile nature of the Albany currency. Clearly, the committee was not in a position to fund any significant portion of the military activity needed to keep the Hudson Valley secure. The even larger requirement of a potential Canadian campaign (vis-à-vis the Albany Committee's financial capabilities) made Albany's separate action unthinkable. Within two weeks (August 1, 1775), General Schuyler instructed his commissary general, Walter Livingston, to pay the Albany Committee £1,000 in New York Colony currency and simultaneously he directed the committee to call in its emission.

Jacob C. Ten Eyck and Jacob Lansingh were appointed as a sub-committee to receive the £1,000 New York Colony money, and a total of £330 of the Albany currency is known to have been cancelled, £200 on September 17 and £130 between October 27 and October 30, 1775. Any redemption of the balance of the notes is a mystery. No mention of the June 25, 1775, issue appears again in the recorded minutes of the committee.

The fundamental concept underlying the second Albany issue, that of February 17, 1776, appears to be entirely different from the initial emission—although it, too, was personally guaranteed by members of the Albany Committee of Correspondence. During any war, and the American War of Independence was no exception, a considerable portion of circulating coin, and especially the lowest denominations, tends to disappear, reflecting its markedly increased value as bullion. This probably was the basis for the Albany Committee's resolution of February 2, 1776, to undertake that "a Sum not exceedings Two Thousand Pounds be struck in small Bills of Credit and that Messrs. Robert Yates, Jeremiah Van Rensselaer, Joseph Young and Rutger Bleecker be a Committee to bring a Plan for that purpose."



⁷ Minutes, 1, p. 176.

⁸ Minutes, 1, p. 326.

On February 16 a plan was presented and on February 18, the minutes note that "the Committee resumed the Consideration of the Plan for emitting of £2,000 in Bills of Credit and thereupon Resolve that they do agree and approve of the Report of their Committee provided a sufficient Number of Signers can be procured."

Observably, the prospective emission again was dependent upon the willingness of individual members of the committee to pledge their financial support, and apparently it was promptly obtained. On February 22 a resolution was passed that "Messrs. John Ja Beeckman, Abraham Cuyler, Jacob Cuyler, Samuel Stringer, Jeremiah Van Rensselaer and John Ten Broeck or any two of them be appointed and they are hereby appointed to Sign the Bills of Credit to be emitted by this Board." Subsequently, notes with an earlier date, February 17, 1776, were issued ranging in value from \$1/8 to \$5/8 carrying both their American and English equivalents: \$1/8, 1 shilling; \$1/6, 1 shilling 6 pence; \$1/4, 2 shillings; \$1/2, 4 shillings; \$5/8, 5 shillings.

The fact that the largest bill of this issue was only 5/8 of a dollar and that only £2,000 (\$5,000) was emitted clearly indicates that the bills were created to facilitate small change transactions rather than to play a significant part in any local or regional financial plan.

Neither the number of bills of each denomination of the February 17 issue nor their ultimate cancellation, redemption or other disposition subsequently appears in the minutes of the committee, and the two unique actions of the Albany Committee of Correspondence simply fade into the overall pattern of currency history.

Tangentially, almost all of the signers of the Albany bills recorded significant patriotic careers. At different times, Abraham Yates, Jr., and Samuel Stringer chaired the Albany Committee of Correspondence. Yates was a deputy to the New York Provincial Constitutional Convention, president of the New York Provincial Congress, mayor of the city of Albany, member of the Continental Congress and a presidential elector for Washington and Adams.



⁹ Minutes, 1, p. 338.

¹⁰ Minutes, 1, p. 341.

¹¹ Newman (above, n. 1), p. 239.

Samuel Stringer, a physician, was surgeon general of the Northern Military Department and accompanied the American troops on their invasion of Canada. Volkert Douw was an Indian commissioner, member of the New York Colonial Assembly, mayor of the city of Albany, and vice president of the First New York Provincial Congress. Later in life, Jacob Lansing served as a county judge, and Jacob C. Ten Eyck, like Douw was a commissioner of Indian affairs and mayor of the city of Albany. John Jacob Beeckman and Abraham Cuyler also were mayors of the city of Albany. Jacob Cuyler served three terms in the New York Provincial Congress. Jeremiah Van Rensselaer was a member of the first United States Congress in 1789 and lieutenant governor of New York state in 1801. John Ten Broeck was a member of the Erie Canal Commission, member of the New York Provincial Congress for four sessions and sheriff of the city of Albany.



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PLATES



Tarsus Issues of Pharnabazos and Datames





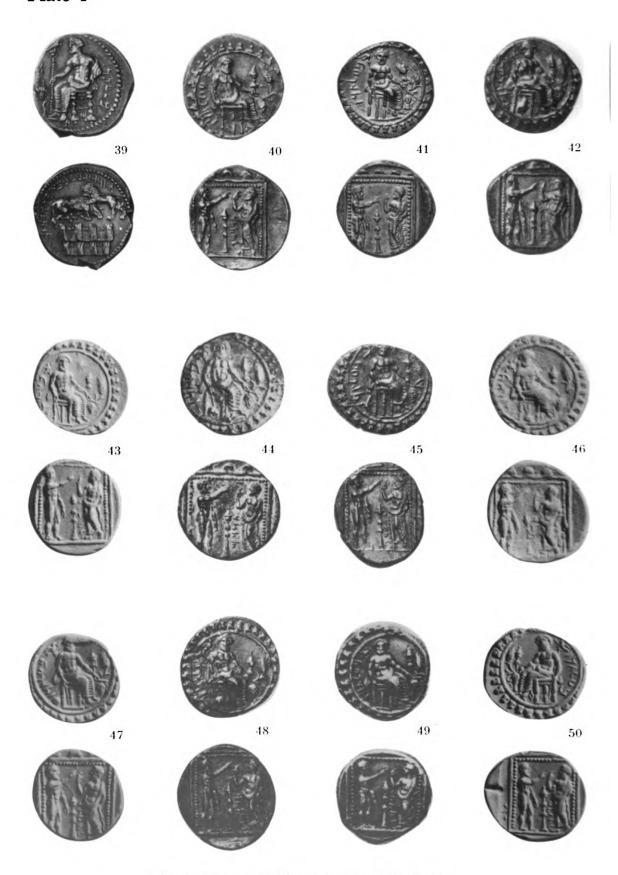
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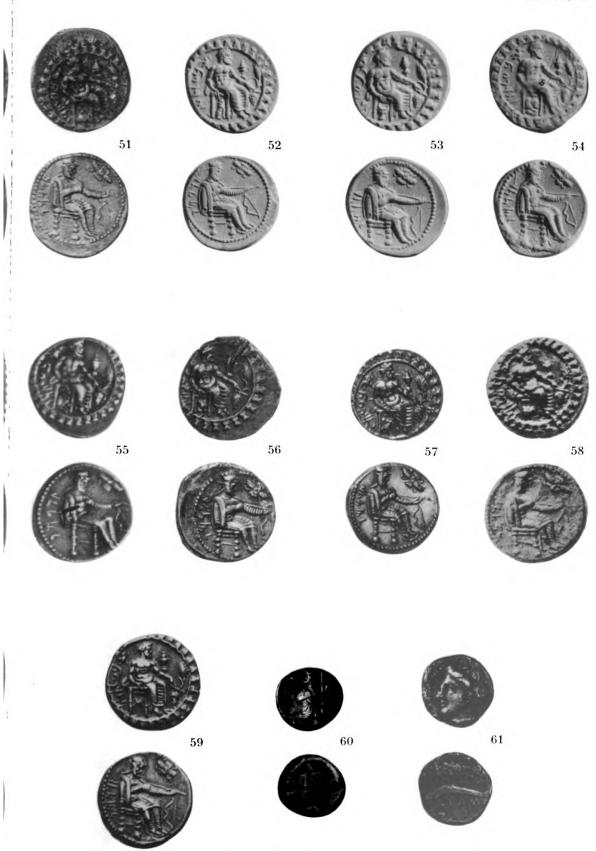
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Tarsus Issues of Pharnabazos and Datames



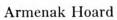


Tarsus Issues of Pharnabazos and Datames



Plate 6









Armenak Hoard





Armenak Hoard



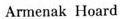


Armenak Hoard



Plate 10





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Armenak Hoard



Plate 12



Armenak Hoard





Armenak Hoard



Plate 14



Armenak Hoard

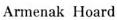




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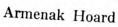




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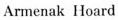


Armenak Hoard



Plate 22









Armenak Hoard





Armenak Hoard

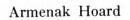




Armenak Hoard







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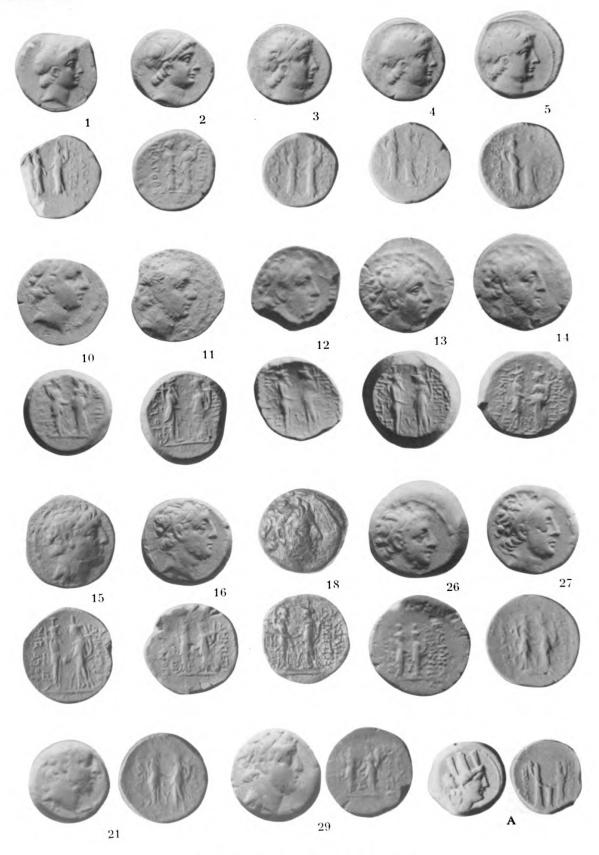
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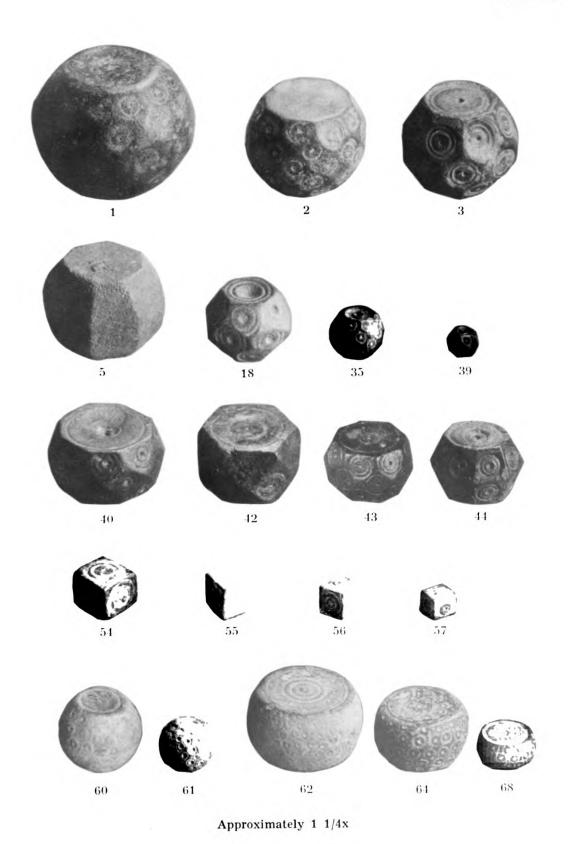
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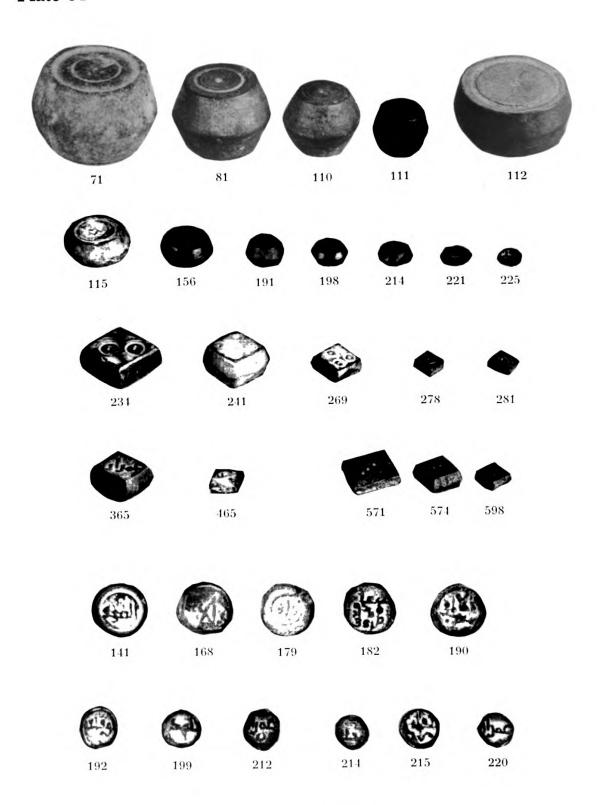
Divine Couple of Demetrius II





Islamic Bronze Weights

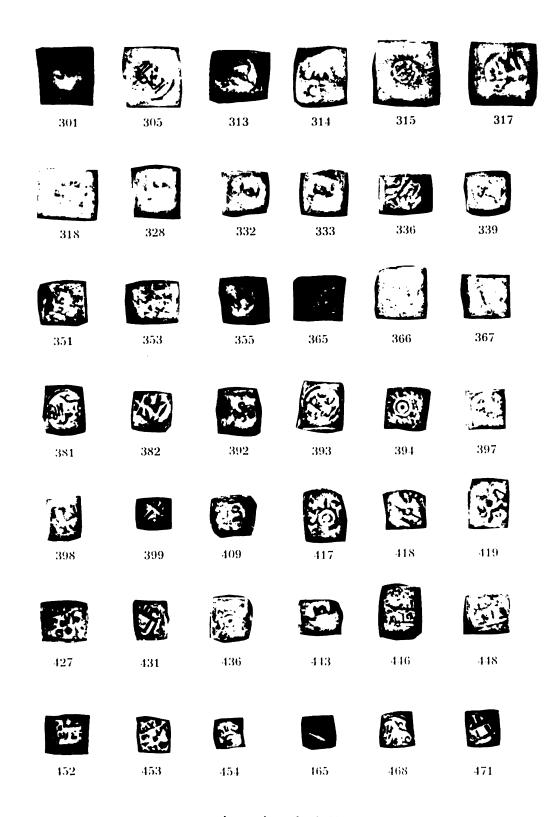




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Islamic Bronze Weights

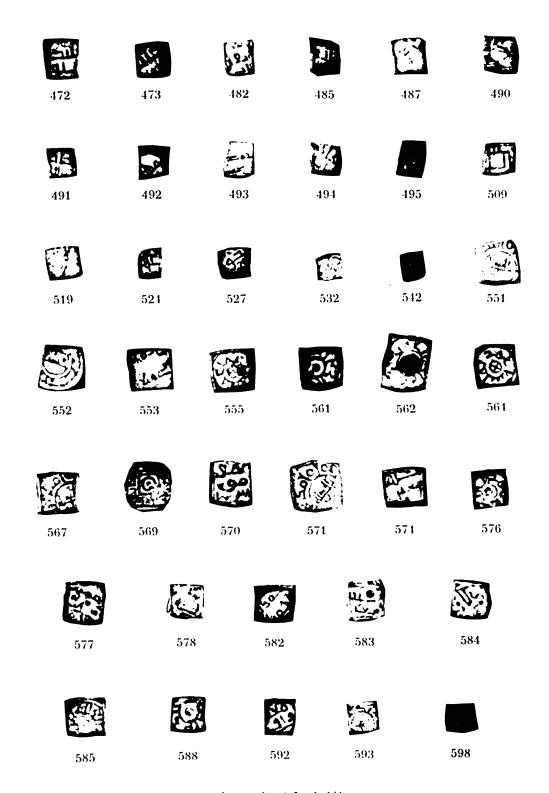




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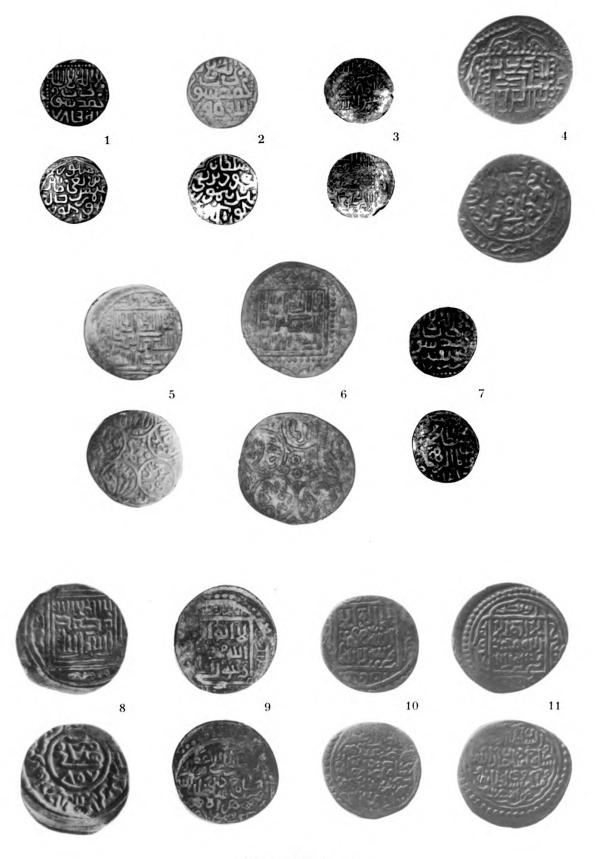


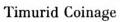


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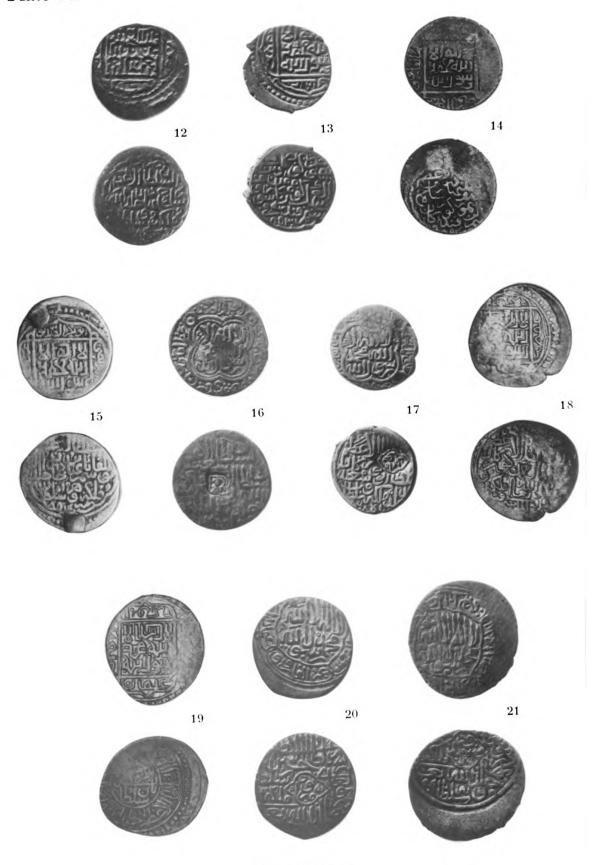
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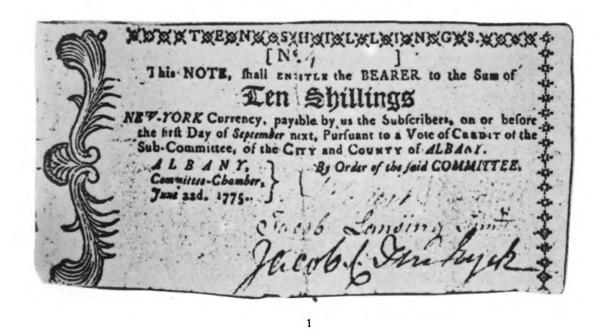












Two	CALBOAN COUNTY
Shilings IV. YorkC.	THIS Mote shall intitle the Possessor thereof to receive from any of us. the Eudscribers, on Demand, one FOURTH of a Spanish MILLED Dollar, in CONTINENTAL CURRENCY, pursuant to a Resolve of the Committee of the City and County of Albany. Committee-Chamber Wacob Guy less Fibruary 17, 1775. The Objillings.

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THE AMERICAN NUMISMATIC SOCIETY

MUSEUM NOTES 32



THE AMERICAN NUMISMATIC SOCIETY
NEW YORK

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JUN 3 0 1988

THE AMERICAN NUMISMATIC SOCIETY

Founded 1858 - Incorporated 1865

BROADWAY BETWEEN 155TH & 156TH STREETS New York, N.Y. 10032

PURPOSES: The Society was founded for the collection and preservation of coins, medals, decorations and paper money and for the investigation of their history and other subjects connected therewith.

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The museum is open to Members and the public from 9 a.m. to 4:30 p.m. on Tuesdays, Wednesdays, Thursdays, Fridays and Saturdays. In addition, the public exhibition is open on Sundays from 1 to 4 p.m. The museum is closed on Mondays and the following holidays: New Year's Day, Lincoln's Birthday, Independence Day, Election Day, Thanksgiving Day, the fourth Friday in November, the fourth Saturday in November, December 24, Christmas Day, The public exhibition is open to the public from 9 a.m. to 4:30 p.m. on the fourth Friday and the fourth Saturday of November.



MUSEUM NOTES 32



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ANSMN 32 (1987)

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STUDIES OF THE NUMISMATIC MATERIAL FOUND AT SEUTHOPOLIS: PROBLEMS, RESEARCH METHODS AND BASIC CONCLUSIONS

(PLATE 1) KAMEN DIMITROV

Archaeological studies of the early hellenistic Thracian city of Seuthopolis were carried out by a group of scholars at the Archaeological Institute and Museum in Sofia, headed by Professor D. P. Dimitrov from 1948 to 1954. The specific architectural aspect of these ruins with the abundance of archaeological, numismatic and epigraphic materials found at this unique monument shed light upon a number of features of the economic, political, social, religious and cultural life of Thracian society in the early hellenistic age from the last quarter of the fourth to the first quarter of the third century B.C.

The first publications on Seuthopolis contain only very general data on the coins found in the city.¹ In 1972 a study of part of the numismatic material from the city was published, dealing with the coins struck by

¹ D. P. Dimitrov: "Sevtopol-frakiiskii gorod blis s. Coprinka, Kazanlikskogo raiona," Sovietskaya Archeologia 1 (1957), pp. 199–216, esp. pp. 201 and 205; "Materialnata cultura i iskustvoto na trakite pres rannata elinističeska epocha IV-III v.pr.n.e.," Essays Archeologičeski otkritia v Bulgaria (Sofia, 1957), pp. 63–92, esp. p. 70; "Seuthopolis," Antiquity 35 (1961), pp. 91–102, esp. p. 92; M. Čičikova, Sevtopolis (Sofia, 1970), pp. 23 and 25, figs 100–111.



the dynast Adaios.2 A preliminary announcement was made at the Second International Congress of Thracology on the chronology of the coinage of Seuthes according to the numismatic material found at Seuthopolis,3 while a whole chapter dealing with the ancient coins of the city⁴ appeared in a volume on Seuthopolis, published in 1978. Serious critical observations were made about the two latter works.⁵ In 1979 the first specialized study of the coin hoards of Seuthes III appeared; it included two such hoards from Seuthopolis. In the following three years a previously unknown type struck by Seuthes III was published, as well as a coin struck by Roigos, an unknown dynast of Thrace, and the first known coin struck by the Thracian dynast Spartocus, Seuthopolis being the provenance of the latter two.7 Studies of different types of coins struck by Seuthes III, found at Seuthopolis,8 also appeared, and new announcements were made concerning the presence of coins minted by Adaios which had come to light in the city. Problems, connected with the provenance and circulation of foreign coins in the

- ² D. P. Dimitrov, "Bronzovi moneti na dinasta Adei ot raskopkite v Sevtopolis," *Archeologia* 3 (1972), pp. 6-13.
- ³ D. P. Dimitrov and K. Dimitrov, "Le monnayage de Seuthes III selon les données de Seuthopolis," *Actes du II Congres International de Thracologie* 2 (Bucarest, 1976), pp. 165-69.
- ⁴ D. P. Dimitrov and M. Čičikova, eds., *The Thracian City of Seuthopolis* (Oxford, 1978), chapt. 3, pp. 33-42, by K. Dimitrov.
- ⁵ Y. Youroukova, "Monetosečeneto na Sevt III," Numismatika 1 (1979), pp. 3-12.
- ⁶ K. Dimitrov, "Kolektivni nachodki s moneti na Sevt III," Vekove 4 (1979), pp. 76-83.
- ⁷ K. Dimitrov: "New Types of Thracian Bronze Coins from the Excavations in Seuthopolis," Bulgarian Historical Review 1 (1980), pp. 76-84, the same also in Sovietskaia Archeologia 3 (1980), pp. 284-89; "The Coinage of Spartocus and Some Problems in the Political Development of Thrace in the Beginning of the Hellenistic Age," Etudes Balkaniques 3 (1981), pp. 98-107.
- ⁸ K. Dimitrov: "New Types..." (above, n. 7), pp. 76–78; "Moneti na Sevt III (typ Zevs-konnik) ot raskopkite v Sevtopolis," *Isvestia na Bulgarskolo Istoričesko droujestvo* 33 (1980), pp. 17–22; "Moneti s portreta na Sevt III ot raskopkite v Sevtopolis," *Vekove* 1–2 (1982), pp. 133–39; "Kam vaprosa za typologiata i chronologiata na monetite s imeto na Sevt III," *Thracia* 6 (1984), pp. 252–58.
- K. Dimitrov, "Ošte za datiraneto na Adei," *Istoričeski pregled* 2 (1980), pp. 68-71.



region of Seuthopolis were also studied.¹⁰ A historical interpretation of the principal results of these numismatic studies was put forward, comparing them with the data provided by historical and epigraphic sources.¹¹ The whole publication and interpretation of the numismatic material appeared in volume 2 of the *Seuthopolis* series.¹²

The numismatic material from Seuthopolis includes a total of 1,300 pre-Roman and 30 Roman and late Roman coins. The pre-Roman coins, which are the most interesting, are classified in two large groups, local and foreign coins. Local minting is represented by coins bearing the name of the local ruler Seuthes: 849 pieces, belonging to 7 types. The foreign coins are distributed as follows.

Attica: city of Athens (1);

Epirus: city of Elea (1);

Macedonia: cities of Ortagoria (1) and Philippi (2); rulers Philip II (138), Alexander the Great (96), Philip III (3), Alexander IV (1), Cassander (55), Demetrius I Poliorcetes (5); anonymous (4);

Thrace: cities of Messambria (2), Apollonia Pontica (1), Egospotamos (1), Cardia (1), Lysimachia (19), Aenos (4); kings of Thrace Lysimachus (43); dynasts in Thrace Spartocus (1), Roigos (1) and Adaios (14);

Syria: Rulers: Seleucos I Nikator (1) and Antiochus I Soter (1).

A large number of coins are in poor condition and cannot be identified.

The main problems posed by the pre-Roman material are numismatic.

The main problems posed by the pre-Roman material are numismatic, economic and political. They are differentiated in two main groups. Group A contains problems connected with the kingdom of Seuthes III: the chronological limits of Seuthopolis as a city center and capital of the kingdom; the chronology and attribution of the types of coins with the inscription ΣΕΥΘΟΥ, the localization of their minting and the part they

- ¹⁰ K. Dimitrov, "Circulation de monnaies Macédoniennes et monnaies des Diadoques à Seuthopolis pendant la haute époque héllénistique," *Proceedings of the 9th International Congress of Numismatics* (Berne, 1979), pp. 227-31.
- ¹¹ K. Dimitrov: "Darjavata na Sevt III spored numismatični i epigrafski danni ot Sevtopolis," *Vekove* 1 (1981), pp. 54-61; "The Coinage of Spartocus and Some Problems in the Political Development of Thrace...," *Études Balkaniques* 3 (1981), pp. 98-107. Some objections are raised by D. Draganov, "Političeskite otnošenia mejdu darjavite na Sevt III i Spartok," *Vekove* 3 (1983), pp. 46-52.
- ¹² K. Dimitrov and VI. Penčev, Sevtopolis 2: Antični i srednovekovni moneti (Sofia, 1984).



had in the circulation of the kingdom of Seuthes III; and stages in the circulation of foreign coins in the region of Seuthopolis and the city's contacts with other centers in the region. Group B contains problems connected with other dynasts in Thrace and with the political development of Thrace in the early hellenistic age in general: the chronology and localization of the minting and government of the dynasts Spartocus, Roigos and Adaios; and characterization of the state-political structure of Thrace in the early hellenistic age.

The problems of group A were analyzed following two principles. First, the material from Seuthopolis is a compact numismatic complex with chronological limits within the framework of six to seven decades. Second, this complex was in a state of uninterrupted development, the principal indicator being the numerical ratio between local and foreign bronze coins in different periods. This ratio simultaneously shows the scale of the local minting and its share in the circulation of the kingdom of Seuthes III which, for its part, leads to definite conclusions in connection with the stages of its economic development.

The problems of group A find their solution in studies of two subgroups of coins. The first subgroup contains the coins of the Macedonian rulers, Lysimachus and the city of Lysimachia which had the largest part in the circulation of Seuthopolis after the bronze coins of Seuthes III. These coins are considered chiefly in connection with the special features of their local circulation in Seuthopolis. Here it is the typology and the total number of coins which are the most important, together with the data obtained from statistical studies of the dated coins and hoards. The second subgroup contains the coins with the name of Seuthes III from Seuthopolis. They are considered as a differentiated numismatic complex. The many possibilities offered for analysis and generalization are due to the fact that the provenance of this complex is Seuthopolis, the very center of minting, discovered in the course of regular archaeological excavations. In these circumstances a complex method of analysis was used to establish the place of each coin type in the chronological order of striking by Seuthes III. This method includes: grouping the types of coins according to the images and additional symbols; establishing variants and subvariants of the images in every type and the number of coin dies as a criterion of the length of time and intensiveness of the minting of each type;



comparing average weights of the types of coins; statistical studies of the overstruck coins of every type and a comparative analysis of the data obtained; tracing and comparing the stratigraphic distribution of the coins in the tumuli outside Seuthopolis; a comparative statistical analysis of the hoards of coins of Seuthes III preserved (from Seuthopolis and from other regions of Bulgaria) in relation to foreign coins, those of Seuthes III and the overstruck coins.

As to the problems of Group A, on the basis of the numismatic material it was confirmed that Seuthopolis was built on the site of an older Thracian settlement most probably ca. 320 B.C., ¹³ a conclusion which synchronizes with information about the military and political activity of Seuthes III in this period (Diod. 18.14.2–4). After attaining the height of its prosperity in the last decade of the fourth century and the early third century B.C., Seuthopolis perished as a city center and capital of the kingdom of Seuthes ca. 275 B.C. The absence of coins of Antigonus Gonatas (277–239 B.C.) favors this dating which is also supported by the general picture of certain archaeological finds from the city (e.g. amphorae seals) and the absence of potsherds of Megara type cups.

The abundant numismatic material and the broad spectrum of coin types, emissions, and denominations found in Seuthopolis reflect the extensive contacts which the city maintained with the outside world. At the same time the material illustrates a highly developed economic life for the time in the territory of Seuthopolis and its surroundings, connected with an intensive circulation and minting of bronze coins of various denominations. Up to the end of the last but one decade of the fourth century B.C. the bronze coins of Philip II and Alexander the Great had the most active share in circulation and they were probably treated as units.

The numerous finds of coins bearing the name of Seuthes III localize the minting of these coins in Seuthopolis which is known as the capital of this ruler from epigraphic sources. ¹⁴ The appearance of this minting shows the strengthening of the political power of Seuthes III. It first began about the period after Seuthopolis was built, probably ca. 320

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<sup>13</sup> D. P. Dimitrov, "Materialnata cultura..." (above, n. 1), p. 70.
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¹⁴ D. P. Dimitrov, "Materialnata cultura..." (above, n. 1), p. 83.

B.C., while its development took place within the chronological limits of the existence of the city itself, ca. 320 to ca. 275 B.C. The first coins of Seuthes III of the star/thunderbolt type (Plate 1, 1) and later of the eagle/wreath type (Plate 1, 2-3) struck ca. 320 to ca. 310 B.C. have a smaller denominational value compared with the Macedonian bronze coins and played a secondary role in the circulation of Seuthes' kingdom.

In the early years of the last decade of the fourth century B.C., coin circulation in Seuthopolis and in Seuthes' kingdom underwent considerable change. The bronze coins of Philip II and Alexander the Great yielded pride of place to those of Cassander, which is shown in a hoard from Seuthopolis and by the types of coins overstruck by Seuthes III in the last decade of the fourth century B.C. Attempts to stabilize the local bronze coins are also noticeable. The minting of units, eagle/thunderbolt type (ca. 310 to ca. 309/8 B.C., Plate 1, 3), began in Seuthopolis, some of these coins being silver plated and obtaining a higher value; but at the same time the overstriking of foreign bronze coins with the coin types of Seuthes III started.

All these processes, commencing in the earliest years of the last decade of the fourth century B.C. increased steadily in the following years. In the period of 309/8 up to about 295 B.C. bronze coins of three types were struck in Seuthopolis: Zeus/spear (quarter, Plate 1, 4), Zeus/ thunderbolt (half, Plate 1, 5), and Zeus/horseman (unit, Plate 1, 6). In the circulation, bronzes of the latter type predominate in number over all remaining foreign coins. In the same period overstriking of foreign coins assumed a mass character, a standardization of the circulation being thus obtained and facilitating commodity and monetary operations within the framework of the local market. Such transactions already took place on the basis of the local bronze coins or with a quite insignificant number of foreign coins. This is apparent from the three hoards of coins of the type Zeus/horseman which, being of a clearly expressed commercial character, undoubtedly indicate the considerable penetration of commodity and monetary relations in the daily economic life of the kingdom of Seuthes. All these facts lead to accepting that the last decade of the fourth century and the first years of the third century B.C. were a period of the greatest economic prosperity of the kingdom of Seuthes.



In the first decades of the third century B.C. (from ca. 295 to 275 B.C.), when the heirs of Seuthes III ruled in Seuthopolis, bronze coins were struck with Seuthes' portrait and name (Plate 1, 7–10). Beside their propaganda function they also were the basic coinage in circulation in the kingdom. The lack of hoards of a commercial nature from that period hints at a certain decline in the local economic life of the state. Nevertheless, as the numismatic material shows, the state maintained certain contacts with regions controlled by Lysimachus.

The coinage of Seuthes III marked certain new features in the development of Thracian minting. It is the variety of types of coinage which, above all, impresses one, coins belonging to three different typological groups. The images are mainly in the spirit of the Macedonian royal traditions: the head of Zeus with his attributes eagle and thunderbolt (types of Philip II and Alexander the Great) and the eight-pointed star known as the badge of the Macedonian dynasty. This fact illustrates a historical moment when the purely ethnic framework of these traditions was broken and they became universal for the whole of the early hellenistic world. Certain earlier traditions established in Thrace had not been forgotten either, and they appeared in coins of the type that bore the portrait of Seuthes III. His coins took an active part in the circulation of the kingdom when, for the first time, the local coin in the Thracian kingdom was imposed over foreign coins and became the principal coin of daily circulation. For the first time a system of coinage was created consisting of three bronze denominations intended without exception for the needs of the local market. The new coins struck by Seuthes III were proof of the character and nature of Seuthes' kingdom. In the process of its development this kingdom did not yield pride of place to the basic laws and trends in the formation and development of the rest of the early hellenistic world.

The problems of group B find their solution in the study of the coins of the dynasts Spartocus, Roigos, and Adaios found at Seuthopolis. Here first of all (in view of the absence of large numbers of single finds and of hoards of such coins in general) the special features in the images and inscriptions on the coins are taken into consideration, together with their presence in the numismatic complex of Seuthopolis, the countermarks on certain coins, and the scantiness of hoards. The results obtained were compared with data from written sources and epigraphic monuments.



It is apparent from the epigraphic sources (IG Bulg 1731) that Spartocus was a contemporary of Seuthes III and his heirs. The coins of this dynast (Plate 1, 11) were struck in his capital, the city of Kabyle, where about another 15 of them were found.15 The portrait of Spartocus is depicted on them, and the dynast's name is accompanied by a royal title, the only case in the history of early hellenistic Thrace in the reign of Lysimachus. This feature dates the coins most probably between 295-290 B.C., bearing in mind Lysimachus' political commitments outside Thrace.¹⁶ The image of Alexander the Great with the horn of Zeus-Amon on the only coin of Roigos found hitherto (Plate 1, 12) dates it to the period of ca. 297 to ca. 275 B.C. The minting of these two dynasts was greatly restricted in scale and was chiefly intended to propagate their political independence. Grounds for such a conclusion are provided by the scanty numismatic finds, 1 coin of Roigos and 17 coins of Spartocus (struck from three obverse dies, the work of one engraver) which show that the coins of Spartocus and Roigos played an insignificant part in the circulation of their domains.

The seventies of the third century B.C. appear as the last years of the existence of Seuthopolis and are simultaneously a certain terminus ante quem for the four types of coins struck by Adaios and found in the city (Plate 1, 13–16). Their variety shows that Adaios was a contemporary of Seuthes III and that there were contacts between the two kingdoms. Statistical studies of the coins of Adaios (Plate 1, 17–18), those countermarked with a star (Plate 1, 19), and those of the Odrysian ruler Kersobleptes (359–341 B.C.), in comparison with written sources and epigraphic monuments on the Island of Samothrace, 17 have led to the



¹⁶ D. Draganov: "Kam monetosečeneto na trakiiskia vladetel Spartok ot Cabyle," Numismatika 2 (1980), pp. 16 22; "Novi moneti na Sevt III i Spartok ot Cabyle," Numismatika 2 (1982), pp. 31 36, esp. pp. 33 and 35; L. Getov, "Moneta na trakiiskia dinast Spartok ot Cabyle," Numismatika 3 (1980), pp. 27-31.

¹⁶ For dating before 306 B.C., see D. Draganov: "Kam monetosečeneto..." (above, n. 15), p. 20; "Političeskite..." (above, n. 11), p. 48. For dating ca. 281–277 B.C. see D. Draganov: "Cabyle i monetosečeneto na Skostok," *Isvestia na museite ot Yougo-istočna Bulgaria* 7 (1984), pp. 39–52, esp. p. 46; "Chronologia na monetosečeneto na Spartok," *Numismatika* 2 (1985), pp. 4 10.

¹⁷ K. Dimitrov: "Novi numismatični danni za lokalisiraneto i datirovkata na dinasta Adei," Vekove 3 (1984), pp. 14–22; "ΑΔΑΙΟΣ: isvori, identificatsia, lokalisatsia i datirane," Essays Prof. Christo Danov (Sofia, 1985), pp. 94–104.

conclusion that Adaios ruled a differentiated territory, the capital of which was Kypsela where he minted his coins, and that he ruled in the last quarter of the fourth century and the early years of the third century B.C. Numismatic studies, parallel with the remaining data, show with certainty the simultaneous existence of several independent dynasts, each of whom ruled over a separate domain with its own capital. Thus, contemporary ideas about the state and political structure of early hellenistic Thrace are placed in a new light.

KEY TO PLATES

Photographs by Mr. Mario Philipov

Bronze coins with the name of Seuthes III.

- 1. National Archaeological Museum, Sofia
- 2. National Archaeological Museum, Plovdiv
- 3. Private Collection
- 4. National Archaeological Museum Sofia (from Seuthopolis)
- 5. Privat Collection
- 6. National Archaeological Museum, Plovdiv

Bronze coins with the name and the portrait of Seuthes III (post-humus)

- 7. National Archaeological Museum, Sofia
- 8. National Archaeological Museum, Plovdiv
- 9. Private Collection. Restruck on Apollo/tripod bronze of Cassander
- 10. National Archaeological Museum, Sofia. Restruck

Bronze coin of Spartocus

11. National Archaeological Museum, Sofia (from Seuthopolis)

Bronze coin of Roigos

12. National Archaeological Museum, Sofia (from Seuthopolis)



Bronze coins of Adaios: varieties found at Seuthopolis.

- 13. Staatliche Museen zu Berlin
- 14. Staatliche Museen zu Berlin
- 15. Staatliche Museen zu Berlin
- 16. Collection De Luynes, Cabinet des Médailles, Paris

Bronze coins of Adaios: varieties not found at Seuthopolis

- 17. Private Collection
- 18. Cabinet des Médailles, Paris
- 19. British Museum, London

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TWO UNPUBLISHED OVERSTRIKES: NEW STYLE ATHENS AND AESILLAS THE QUAESTOR

(PLATES 2-3)

ROBERT A. BAUSLAUGH

Two overstrikes have played an important role in the debate about the absolute chronology of the new style Athenian coinage: an issue of Aesillas the Roman Quaestor struck over Athenian issue Demeas-Kallikratides and a posthumous Lysimachus issue of Byzantium struck over Aesillas.¹ Unfortunately, neither has provided incontestable evidence. The date of the Aesillas coinage, once thought securely datable to ca. 94–86, is now disputed; and the Byzantine Lysimachus issue cannot be precisely dated in the absence of any comprehensive study of that coinage. There is, however, new evidence which must be taken into account in any further discussion of the chronology of either the

¹ See, M. Thompson, The New Style Silver Coinage of Athens (New York, 1961), pp. 382, 400-401, 413-14 (hereafter, New Style), and "Athens Again," NC 1962, pp. 329-31; D. M. Lewis, "The Chronology of the Athenian New Style Coinage," NC 1962, pp. 296-99; C. Boehringer, Zur Chronologie Mittelhellenistischer Münzserien 220-160 v. Chr., AMUGS 5 (Berlin, 1972), p. 31; M. Thompson, "Byzantium over Aesillas," RN 15 (1973), pp. 54-65; C. Boehringer, "Hellenistischer Münzschatz aus Trapezunt 1970," SNR 54 (1975), p. 62; H. B. Mattingly, "L. Julius Caesar, Governor of Macedonia," Chiron 9 (1979), pp. 147-67; O. Mørkholm, "The Chronology of the New Style Coinage of Athens," ANSMN 29 (1984), pp. 31-38.



Aesillas-Athens and Byzantium-Aesillas overstrikes specifically or the new style Athenian and Aesillas coinages more broadly.²

NEW STYLE ATHENS OVER THE REGNAL COINAGE OF BITHYNIA

In 1974 a new style Athenian tetradrachm was illustrated in an R. J. Myers FPL (Mar. 1974, 62, 16.82), Plate 2, 2. Both the obverse and reverse dies appear in Margaret Thompson's study of the new style coinage, and there would be nothing particularly interesting about the coin, if it were not for the fact that it is quite clearly struck on an earlier tetradrachm of a different mint.³

The earlier Attic weight tetradrachm had a male portrait on the Athenian obverse (Plate 2, 2, to the right of Athena). The very front of the face, including the forehead, nose, both lips, and chin are distinctly visible in the field immediately to the right of the portrait of Athena. In addition, behind Athena's head, in the rear field between the two plumes of her helmet and the circular border of dots, there are traces of the hair and neck of the under portrait and two curving strands which

- ² In addition to the two overstrikes discussed here, there exists a third example in Paris (SNGDelepierre 1486; see New Style, pp. 50-52, obv. 66) the undertype of which has not been positively identified. H. Nicolet in a note to 1486 offers a suggestion from M. Thompson that the lower type may be a portrait coin of Eumenes II. This type was formerly known from a single example in the British Museum (see my "The Unique Portrait Tetradrachm of Eumenes II," ANSMN 27 [1982], pp. 39-51); now there is a second one known (Bank Leu, May 1983, now in Paris). H. Seyrig believed that the undertype was a posthumous Lysimachus and explained the traces of a wreath visible beneath the Athenian reverse as the result of double striking of the Athenian overtype (Lysimachi have no wreath on the reverse). As unlikely as it seems, I believe Seyrig may be correct. The closest parallels to the portrait of the undertype can be seen among the posthumous Lysimachi in the Babylon 1900 hoard (IGCH 1774). On the other hand, the treatment of the trailing diadem ribbons on the extant Eumenes II portrait issues is completely different from that of the undertype.
- ³ The obverse is *New Style* 177b (p. 76 and plate 19) and the reverse is *New Style* 172b (p. 76 and plate 19). Both this specific obverse/reverse connection and the letter A preserved on the amphora provide the new information that obverse 177 was actually one of the earliest dies cut in the year (i.e. along with 169–70) and was then used as needed during much of the remainder of the year.



separate and curl in opposite directions from the base of the undertype's head. These details can be confirmed by comparing the overstrike with another example of the new style series struck from the same obverse die (Plate 2, 1). The crucial elements to note are, first, that there exists a significant die break just to the right of Athena's helmet (not to be confused with the traces of the undertype) and, second, that the plumes are perfectly smooth on the new style die (confirming that the irregularities seen in this area of the overstrike are traces of the undertype and not the new style die).

Although the Athenian reverse has left virtually no trace of the older issue, there seems to be a tiny sliver of the undertype preserved just to the right of the owl's head. This trace just touches the olive wreath and looks something like a tiny letter "h" written backwards (Plate 2, 2, immediately to the right of the owl's head). Insignificant though this may seem, it does, in fact, correspond to a detail found on the reverse type of at least one regnal coinage. To identify the undertype with certainty, we must focus on the preserved details of the portrait type: the front of the face and the back of the head.

Set as it is in a corpulent face beneath a long and pointed nose with arched nostrils, the mouth of the undertype is distinctive for its compressed and downturned lips which rise in a very pronounced manner from the chin. It should be noted here that the chin itself appears to have been flattened out by the hammering of the overstrike and was originally neither as wide nor as flat as it now appears. In fact, this spreading effect can be further detected in the very wide space which now separates the remnants preserved in the right field from those behind the head of Athena.

In the area behind the helmet and plumes, the most significant preserved feature is the double strand of what can only be the trailing ribbons of a royal diadem. The reversed S-curve of the upper strand has been both damaged and interrupted by the overstrike but is still easily recognized, while the lower strand can be seen curving directly down and crossing the line of the neck just above the border of dots (Plate 2, 1). Together the sharp curves and crossing of the two strands present the impression of restless movement or windblown agitation. Fortunately



for the purpose of identification, this is an uncommon feature among the diademed portraits of Hellenistic rulers.4

Given the preserved details there exist only two regnal coinages which match the undertype: either the dynastic coinage of Seleucid Syria (Plate 2, 5) or Bithynia (Plate 2, 3–4). Within the former series, the required combination of a corpulent portrait type particularized by the downturned line of the mouth and acutely angular connection between the lower lip and chin together with the swirling treatment of the diadem appear only in portraits of Seleucus IV (187–175). However, the minuscule trace of the under type which seems to be preserved on the Athenian reverse differs in location from any of the features of the Seleucus IV reverses (compare Plate 2, 2 and 5). Portraits of Prusias II (ca. 182–149) and Nikomedes II (149–ca. 127), on the other hand, have the combination of corpulent features, flying diadem tails and, in their common reverse type, a standing figure of Zeus whose staff corresponds both in position and outline to the trace preserved on the Athenian reverse (compare Plate 2, 2 and 3–4).

If the regnal coinage of Bithynia is the correct identification of the understrike, the immediate questions which arise are, first, is it possible

- ⁴ Of the rulers who struck Attic weight portrait coins, only the issues of Demetrius Poliorcetes and certain of the Seleucid kings have the specific combination of diadem strands which both curl up and away and fall down and over the neck, but the portrait type is clearly different. See e.g. E. T. Newell, The Coinage of Demetrius Poliorcetes (Oxford, 1927) and A. Houghton, Coins of the Seleucid Empire from the Collection of Arthur Houghton (New York, 1983), hereafter CSE. Others, most importantly the late posthumous Alexander coinage and the Philetaerus coinage of Pergamum, produced issues with facial features which resemble those of the undertype. However, the Alexanders have no diadem at all and none of the Philetaerus issues have diadem ties which curl upward (see Plate 2, 4, for the typical Pergamene regnal type of the early second century).
- ⁵ For portraits of the full range of Seleucid rulers, see especially *CSE* (above, n. 4). On the regnal coinage of Bithynia, see *RGA* 2; *HN*, pp. 519–20; *BMCBithynia*, pp. xxxviii–xliii and 208–15; C. M. Kraay, *Greek Coins* (New York, 1966), pp. 375–76, nos. 764–67; and Janus, "Konig Prusias I von Bythnien," *HMZ*, vol. 8, no. 3 (March 1973), p. 133 (not available to me). Currently, Prof. Dennis Glew of Moravian College is preparing a corpus of the regnal coinage of Bithynia and I am indebted to him for assistance in assessing the stylistic variations in the coinages of Prusias II and Nikomedes II.
 - See e.g. CSE (above, n. 4), nos. 466, 905, 1058-61.



to decide between Prusias II and Nikomedes II and second, if so, what evidence would that specific identification provide for the absolute chronology of the new style coinage? Regarding the first, the problem is that neither the facial details nor the distinctive pattern of the diadem trails appear to be unique to either Bithynian king but can instead be found on issues of Prusias II (ca. 182–149) and Nikomedes II (149–ca. 127), as well as Nikomedes III (ca. 127–ca. 94). Eliminating Nikomedes III as too late on anyone's chronology for the new style issue, this leaves Prusias II and Nikomedes II, both of whom produced a number of portrait issues which are very close to the undertype (compare Plate 2, 1 with 3–4). The only problematic detail is the very wide chin of the undertype, but this can be safely disregarded, since it appears almost certainly to be an effect of the overstrike rather than an intended feature of the original portrait.

There is, however, something about the bold and clearly articulated features of the portraits of Prusias II which does not fit as well with the undertype as the portraits of Nikomedes II (compare Plate 2, 3 [Prusias II] with 4 [Nikomedes II]). The more corpulent and less well articulated features of Nikomedes II together with the more vertical and foreshortened facial features of his portraits seem closer to the preserved style of the undertype than portraits of Prusias II. Nevertheless, it seems impossible to be certain about the identification in the absence of any comprehensive die study of the coinages of these kings, since such a study might reveal more variation in the portrait style of both than appears from the records of examples available in published collections and the ANS photo archive.⁷

The evidence provided by the overstrike for the chronology of the new style Athenian coinage is thus, for the time being, disappointingly

⁷ Much work is needed here. For instance, we know that Prusias II had two portrait types, bearded and unbearded, but the relationship between the two has not been established. There also seems to be more fluctuation in the style of the portrait types than might be expected. The quantity of coinage issued by Nikomedes II appears to be much less than that of Prusias II, though he reigned for nearly the same number of years as Prusias, and there appears to be little stylistic variation. Still, Prof. Glew believes on the basis of his preliminary collection of evidence for Prusias II and Nikomedes II that the "flying" diadem tails are much less common on the latter's coinage than the former.



imprecise. Returning first to Margaret Thompson's arrangement, we find that the Athenian issue involved belongs to Thompson's "early period" dated to 176/5 on her "high" chronology. If, on the other hand, we adopt the "low" chronology of D. M. Lewis and others, the issue would still belong to the "early period" but its date would be ca. 143/2. Given the fact that the reign of Prusias II began ca. 182 (or slightly earlier), neither of the proposed chronologies is excluded because the issue could just antedate the Athenian issue on Thompson's "high" chronology. It must be admitted, however, that if it were to become possible to confirm that the undertype is Nikomedes II (149-ca. 127), this overstrike would definitely rule out the "high" chronology.

AESILLAS OVER NEW STYLE ATHENS

Among five examples of the Attic weight tetradrachm coinage of Roman quaestor Aesillas in the Hungarian National Museum in Budapest is an overstrike on the new style coinage of Athens (see Plate 3, 8 and 12).¹⁰ In this case, the identification of the mint of the under type is obvious, even though very little is preserved. In fact, all that can be seen is the uppermost outline of the owl's head, the letter A of the ethnic, and the very top of the first two letters of a magistrate's name



⁸ New Style, pp. 76-78.

[•] D. M. Lewis (above n. 1).

¹⁰ Budapest 61/953.4. The obverse is known from 29 examples collected by the author, including at least one other overstrike (Hirsch 13, 15 May 1905, 779; Sotheby, 20 July 1914, 72, undertype uncertain). The obverse is listed by R. Fisher, "Two Notes on the Aesillas Tetradrachms: Mint Attribution and a Die Control System," ANSMN 30 (1985), pp. 69–88, as O14 in his catalogue of Theta plus one, two, or three pellet control marks (p. 83). Fisher's identification of obverse dies is, however, badly flawed. His reverse die connection R30 between O13 and O14 is wrong because both obverses are O14 and there are several examples of other dies incorrectly indentified as O14: R32 (Hirsch 13, 15 May 1905, 782) and R40 (SNGCopenhagen 1329) have a different obverse die; R41 (Hirsch 34, 21–22 Feb. 1963, 1186) has another different obverse; and R36 (Hirsch 32, 22–24 Oct. 1962, 2358) is from yet another; none of these obverses is in fact O14. The distinctions between dies and proper organization of this section of the Aesillas coinage will be set forth in the author's die study of nearly 1,000 examples.

sandwiched between the club and the quaestor's chair in the lower right field of the Aesillas reverse (see Plate 3, 8 and 12, and compare with 7).

Amazingly, just enough of the lettering survives to allow restoration and thereby the identification of the exact series of the undertype within the new style coinage. The initial letter can be read by carefully tracing its upper edge which begins at the left (next to the wreath) with a vertical stroke, then drops diagonally to the right, and finally rises vertically again. This is clearly the profile of the letter N. Next, immediately to the right, there is another vertical stroke, after which all traces have been effaced. Despite its fragmentary condition, this letter must be one of only two possibilities. The requirements are very specific. It must be a letter that logically and epigraphically can follow the letter N, it must have an initial vertical stroke, and it must produce a name which is found in the list of first magistrates on the new style coinage. 11 Given these restrictions, only the letters I and E are possible. H, although it also has an initial vertical stroke, can be eliminated for lack of any known name beginning with NH in the new style series; and other vowel combinations cannot meet the test of the initial vertical stroke.

¹¹ There are several issues in the new style coinage which have the letter N in the first line immediately below the ethnic but not as the first letter.

Isssue	New Style		
Antiochus-Nikog.	p. 155, pls. 40-41		
Phanokles-Apollonios	p. 252, pls. 74–75		
Andreas-Charinautes	p. 287, pls. 88–89		
Menaseas-Nestor	p. 369, pl. 128		

Since we cannot be absolutely certain that N was the initial letter from what now remains, each of the above issues deserves comment. Antiochus-Nikog. and Phanokles-Apollonios are eliminated because of the improper shape of the letter which follows the N. This should also be the case for both Andreas-Charinautes and Menaseas-Nestor, but examination of Thompson's plates shows that the lettering in both cases is sloppy enough that the diagonal angles of the delta in the former and alpha in the latter are not always obvious. For this reason, neither issue can be excluded without some reservation. On the other hand, Mened-Epigeno, Zenokles-Harmoxenos (all three issues), Mentor-Moschion, Pantakles-Demetrios, Menedemos-Timokrates, and Menneas-Herodes are not possibilities because N is not followed by another letter in any of them.



There are just three issues in the entire new style coinage where the the first magistrate's name begins with NI or NE.¹²

Issue	"High" Dale	"Low" Date
Niketes-Dionysios	130/29	98/7
Nikogenes-Kallimachos	126/5	94/3
Nestor-Mnaseas	113/2	81/0

Of these three issues, only Niketes-Dionysios fits the exact relationship between the letters of the magistrate's and the ethnic. In both Nikogenes-Kallimachos and Nestor-Mnaseas, the A is placed above the second or even third letter of the magistrate's name and is considerably wider than the A used in the dies of Niketes-Dionysios. This can be seen quite plainly with a careful examination of Thompson's plentiful coin illustrations of the different dies used for these issues.¹³ In contrast, all of the illustrated dies of Niketes-Dionysios have the ethnic directly above the N in exactly the position it occupies on the undertype (compare Plate 3, 12 [overstrike] with 10–11 [Niketes-Dionysios], 13 [Nikogenes-Kallimachos], and 14 [Nestor-Mnaseas]).

Since the chronologies of both the Athenian new style coinage and the coinage of Aesillas are disputed, we might hope that the discovery of a new overstrike involving a specifically identifiable Athenian issue might provide crucial evidence for fixing the chronology of at least one of the two coinages. Unfortunately, this is not the case. Once again, we are faced with a situation in which the date of the undertype, regardless of whose chronology one follows, does not eliminate either possibility. Whether the date of the Athenian issue is 130/29 or 98/7, it still falls



¹² The dates given here are taken from Mørkholm's proposed modification (above, n. 1) of Lewis' "low" chronology at the end of the second century and beginning of the first.

¹⁸ Compare Nikogenes-Kallimachos, *New Style*, pls. 114–15 and Nestor-Mnaseas, *New Style*, pl. 136, with Niketes-Dionysios, *New Style*, pls. 103–5. See also Plate 3, 10–14.

¹⁴ Until 1962 the Aesillas coinage was thought to be securely dated to 94–88. D. M. Lewis then attacked the traditional dating (above, n. 1) and, despite its defense by Thompson, Boehringer, and Mørkholm (above, n. 1), Mattingly (above, n. 1) and others (most recently, A. Burnett, *Coin Hoards* 7 [1985], pp. 59–67) have continued to insist that the traditional date must be abandoned.

before the earliest date (ca. 94-88) assigned to the coinage of Aesillas and therefore cannot by itself answer the question of which chronology is correct.

It seems to me, however, that the new Aesillas overstrike is of significant value for two reasons. In the first place, if we adopt the "low" chronology (i.e. 98/7) and retain the traditional dating of Aesillas ca. 94–88 for at least its initial appearance, Niketes-Dionysios is among the Athenian issues which would be statistically the most likely to be overstruck. The issue of Niketes-Dionysios was one of the largest of the late period and, if it entered circulation ca. 98/7, would almost certainly have been the most common Athenian type in circulation just when the Aesillas coinage was initiated. On the "high" chronology, however, nothing more than random luck can be seen in the overstrike, since at least 35 subsequent issues would have appeared in the intervening years between Niketes-Dionysios and the earliest possible beginning of the Aesillas coinage.

The same reasoning applies to a second point, which involves the chronology of the Aesillas coinage. On the traditional dating of 94–88, the overstrike makes very good sense as the result of the near contemporaneity of the coinages, provided, of course, that we adopt the "low" dating of the Athenian issues. This disappears, however, if we accept the lowest proposed down-dating of the Aesillas coinage, i.e. to the early 60s. With that dating, we are once again forced to accept the idea that the overstrike is the result of mere chance rather than contemporaneity and, more importantly, that the newly discovered overstrike and the previously known example which overstruck an Athenian issue of the mid-70s (on the "low" chronology) are themselves basically contemporary. Such a conclusion is difficult to accept. Nothing about these two Aesillas pieces—not the obverse or reverse style, the sophisticated



¹⁶ See *New Style*, pp. 329-35, which records 33 obverse dies, the third largest number produced in the late period. Wide circulation is reflected in the hoard record, see pp. 534-35.

¹⁶ This was argued by Lewis and accepted by Mattingly (above, n. 1). Burnett, however (above, n. 14), rejects not only the traditional 94-88 dating but also the early 60s, opting instead a date of the "early 70s" which abandons all connections with the prosopographical and historical evidence.

¹⁷ No other conclusion is possible on the "late" chronology of the Aesillas coinage.

control systems used, or even the very fabric of the two overstrikes—supports the argument that they are contemporary issues (see Plate 3, 7 and 9).¹⁸ On the contrary, the sharply contrasting elements of these pieces together with the underlying chronological gap between the Athenian issues overstruck seems to offer the best evidence yet discovered in support of the traditional dating of 94–88 for the introduction of the Aesillas type.

The two overstrikes discussed in this article add significant new evidence to the controversies surrounding the chronology of the new style coinage of Athens and the quaestorial coinage of Aesillas. While neither provides an absolutely certain basis for dating, together they nevertheless increase the weight of circumstantial evidence supporting (1) a lower dating, if not the "low" chronology (of D. M. Lewis and others), for the new style coinage and (2) the higher (ca. 94–88) dating for the beginning of the Aesillas coinage.

KEY TO PLATES

Plate 2

- 1. New Style, obverse 177, ANS (Agrinion Hd. 183b, IGCH 271), 16.59.
- Athens new style overstruck on the regnal coinage of Bithynia: R.
 J. Myers FPL, Mar. 1974, 62, 16.82, overtype = New Style obverse
 177.
- 3. Regnal coinage of Prusias II of Bithynia (ca. 182–149): BMCBithynia, p. 213, 1; pl. xxxviii, 2, 16.46.
- 4. Regnal coinage of Prusias II of Bithynia (149-ca. 127): BMCBithynia, p. 213, 1; pl. xxxviii, 10, 16.46.
- 5. Regnal coinage of Seleucus IV (187–175): CSE 905, pl. 53, 16.95.



¹⁸ Both issues are known from numerous surviving examples and there can be no doubt that they belong to different sections of the Aesillas coinage. Something of the stylistic variations can be seen in the plates of Fisher's study of the control system of the Aesillas coinage (above, n. 10, pls. 30–31), though the organization of the coinage is incorrect.

6. Philetaerus coinage of Eumenes II (197–159): C. Boehringer, "Hellenistischer Münzschatz aus Trapezunt 1970," SNR 54 (1975), pp. 37–64, 97, 16.92 (not in Westermark's Philetaerus).

Plate 3

- 7. Aesillas: Bourgey 7, 10–11 June 1982, 59, 16.76 = NCirc. (1972), 18 = Sotheby, 20 Jan. 1914 (C. Clark), 150.
- 8. Aesillas overstruck on new style Athens: Budapest 61/953.4, 16.87.
- Aesillas overstruck on new style Athens, Demeas-Kallikratides, (New Style, p. 382): Berlin 241/1907, 16.10 (New Style, pl. 138); RN 15 (1973), p. 56, pl. A, 1.
- 10. Athens, Niketes-Dionysios (New Style, pp. 329-35): Empedocles Coll. (Zarova Hd., IGCH 524; New Style, pl. 103, 932b).
- 11. Same issue as 10: ANS 16.76 (Anatolia Hd., *IGCH* 1416; *New Style*, pl. 103, 934a).
- 12. Same coin as 8.
- 13. Athens, Nikogenes-Kallimachos (New Style, pp. 347-50): Paris 16.55 (New Style, pl. 114, 1036).
- 14. Athens, Nestor-Mnaseas (*New Style*, pp. 377-79): Petsalis Coll. 16.06 (*New Style*, pl. 136, 1214c).



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THE CAPPADOCIAN EXPEDITION OF NICOMEDES III EUERGETES, KING OF BITHYNIA

(PLATES 4-6)

DENNIS G. GLEW

Late in the second century B.C. the wealthy and ambitious king of Bithynia, Nicomedes III Euergetes, invaded the troubled kingdom of Cappadocia. There Ariarathes VII, a boy, had been the titular ruler since the assassination of his father, Ariarathes VI, some years earlier but actual power evindently was being exercised by the queen-mother, Laodice. For an ally of the Roman people this was a bold action, indeed, but it was not the first time that Nicomedes had asserted his independence from Rome in foreign affairs. Previously he had joined forces with the king of Pontus, Mithridates VI Eupator, in partitioning the small land of Paphlagonia that lay between their realms. Its

¹ Just. 38.1.1-10. Since this passage is central to the discussion that follows, it has been reproduced in full in Appendix 1 following the catalogue. The section of particular relevance is italicized.

This paper has benefitted considerably from the comments and criticisms of Arthur Houghton, T. James Luce, William E. Metcalf, and Nancy M. Waggoner, who were kind enough to read it in earlier versions. I am very grateful for their assistance. Work on the paper was facilitated by a grant from the Faculty Research and Development Committee of Moravian College, which I also acknowledge with gratitude. A summary of some of the conclusions developed here was read at a session of the annual meeting of the American Philological Association at Cincinnati, Ohio, in December 1983.



annexation had led to an energetic protest by the Romans but to nothing more than that. Encouraged, perhaps, by this success the Bithynian monarch now set his sights on a much greater prize. However, his victory in Cappadocia proved short-lived. The Bithynian invasion was followed by a Pontic one that expelled Nicomedes and established a Pontic influence in Cappadocia that ended that kingdom's independence. Nicomedes would challenge this development only in the Roman Senate, never on the battlefield. With his defeat in Cappadocia the initiative in Asian affairs appears to have passed conclusively to Mithridates Eupator.

For dating the Bithynian and Pontic invasions of Cappadocia the evidence hitherto available has been of limited value, at best. First, a terminus post quem was established by Th. Reinach, who recognized that unusual features on a tetradrachm of Nicomedes from the year 190 of the Bithynian era, whose purpose evidently was to call attention to a victory by the king, must have been meant to allude to the success that he and Mithridates enjoyed in Paphlagonia.² The seizure of that land, which preceded the invasion of Cappadocia, can be set, then, in the year that fell between (roughly) the beginning of October 108 and the end of September 107.³ Moreover, since Nicomedes' victory was memorialized on coins struck by only a single pair of dies, it seems likely to have happened nearer to the end of the year than to the beginning.⁴ Second,

- ³ The new features, which are found on the reverse, consist of a shoot of laurel or palm, upright, to the left of the inscription and a fillet of olives and pearls of the sort known as astragalos. Noteworthy, too, though presumably inadvertant, is the misspelling of the king's name: NIKOMH Δ O Σ instead of NIKOMH Δ OY. See Th. Reinach, "Un nouveau roi de Bithynie," RN (1897), pp. 241-60; reprinted with additional material in L'Histoire par les monnaies: Essais de numismatique ancienne (Paris, 1902), pp. 167-82, esp. pp. 177-82. For data concerning specimens of the coin, see Catalogue 52.2.
- ³ Bithynia used the Macedonian calendar, in which the new year began at the fall equinox, approximately the beginning of October. The epoch of the Bithynian era was October 297/6. See Wm. Bennett, "The Death of Sertorius and the Coin," *Historia* 10 (1961), pp. 459-72; G. Perl, "Zur Chronologie der Königreiche Bithynien, Pontos, und Bosporus," in *Studien zur Geschichte und Philosophie des Altertums*, ed. J. Harmatta (Amsterdam, 1968), pp. 299-330, with Russian translation in *VDI* 109 (1969), pp. 39-69.
- 4 Since the laurel or palm shoot on the reverse of the coin was the usual symbol of victory, the innovation presumably commemorated a great achievement of some sort,



a terminus ante quem is provided by a Delian inscription which accompanied a portrait bust representing Ariarathes VII.⁵ As part of the "annex" added to the temple of the Cabeirae and Magni Di by the priest Helianax, son of Asclepiodorus, and dedicated at the end of 102/1, the inscription suggests that the Pontic invasion of Cappadocia took place prior to that date; at least, Nicomedes is missing from the gallery of dignitaries in which Ariarathes figures, while Mithridates, on the other hand, is the person in whose honor the "annex" was built. Thus, the period in which Nicomedes' expedition to Cappadocia and the counterattack of Mithridates have to be located extends from the summer, approximately, of 107 to early 101, at the latest, an uncomfortably long time.

as Reinach proposed. In addition to the conquest of Paphlagonia, however, several other explanations of the symbol are possible. A. A victory in one of the great games. But since the new detail is unparalleled on the coins of Nicomedes' predecessor and successor as well on the other issues of his own reign, one would expect it to have advertised a more important accomplishment than that. B. Another significant military victory that Justin failed to mention. It is difficult, however, to imagine where else in Asia Minor the king could have been active at this time. C. The Bithynian victory in Cappadocia. In this case the annexation of Paphlagonia would have to be set in B.E. 189 (109/8 B.C.) at the latest. But the evidence to be considered below makes it probable that Nicomedes' expedition to Cappadocia happened several years later than this. Thus, as Reinach suggested, the new feature on the coin of B.E. 190 probably heralded the annexation of part of Paphlagonia, the first extension of Bithynian territory in several generations. E. Olshausen's brief comments regarding the chronology of the episode suggest some reservation regarding Reinach's interpretation: "Mithridates VI und Rom," Aufstieg und Niedergang der römischen Welt 1 (1972), p. 810.

- ⁵ Ins. Délos 1576 = Durrbach, Choix d'Inscriptions de Délos 136g.
- The year is fixed by the synchronism of the epimelete, Theodotos, and the archon, Echecrates, mentioned elsewhere on the monument: F. Chapoutier, Le Sanctuaire des Dieux de Samothrace, Exploration Archéologique de Délos 16 (Paris, 1935), pp. 40-41. The term hiereus genomenos indicates that the edifice was dedicated at the end of Helianax's year in office, see G. Daux, "Sur la Date de l'archonte athénien Argeios (98/7 et 97/6) et la politique religieuse d'Athènes à cette époque," REG 47 (1934), pp. 165-66. Concerning the cult generally, see P. Bruneau, Récherches sur les cultes de Délos à l'époque hellénistique et à l'époque impériale, Bibliothèque des écoles françaises d'Athènes et de Rome 217 (Paris, 1970), p. 390.
- ⁷ G. Daux, "Notes de chronologie delphique: le roi Nicomède III et la reine Laodice," BCH 57 (1933), pp. 77-82.



What dates to pick? Théodore Reinach and Eduard Meyer independently suggested locating the invasions at the very end of the period, in part, at least, because they understood Justin to mean that the Pontic invasion followed hard on the heels of the Bithynian one and that, a few months thereafter, Mithridates murdered Ariarathes VII. Everything transpired rapidly, then, concluding with the assassination of the king of Cappadocia after the dedication of Helianax's temple. But in fact Justin's Latin says only that several months after defeating the Bithynian, Mithridates hatched his plot, not that he carried it to completion at that time. For all one knows, it could have been years before he took action. Still, scholars who have expressed an opinion on the subject subsequently have all accepted the judgment of Reinach and Meyer, albeit hesitantly and with reservations. 10

The purpose of this investigation is to examine three sources of evidence that allow one to fix the dates of the Bithynian and Pontic expeditions to Cappadocia with greater precision and certainty than could be attained previously. The new material also suggests a connection that has gone unnoticed between two of the chief pieces of information regarding Bithynian history at the end of the second century.

First, it is necessary to be as clear as possible about what happened in Cappadocia according to Justin. The epitomator says that Nicomedes

- ⁸ E. Meyer, Geschichte des Königreichs Pontus (Leipzig, 1879), pp. 92-93; RE 3 (1897), s.v. "Bithynia," col. 521 (Meyer); Th. Reinach, Trois Royaumes de l'Asie Mineure: Cappadoce—Bithynie—Pont (Paris, 1888), pp. 118-19, and Mithridates Eupator, König von Pontos, German trans. by E. Goetz (Leipzig, 1895), pp. 89-90.
- Just. 38.1.6: siquidem interiectis mensibus simulat se Gordium ... restituere in patriam velle, sperans, si obsisteret adulescens, causas belli futuras, aut, si permitteret, per eundem filium tolli posse, per quem interfecerat patrem. "Indeed, in a few months he pretends that he wants to restore Gordius to his homeland, hoping that if the young man resisted, that would be reason for war, or, if he agreed, that the son could be eliminated by the same person through whom he had killed the father." I am grateful to Professor Luce for pointing out the correct reading of this passage, which I had failed to appreciate.
- ¹⁰ E.g., RE 15 (1932), s.v. "Mithridates" (12), col. 2167 (Geyer); RE 17 (1936), s.v. "Nikomedes" (5), col. 497 (Geyer); D. Magie, Roman Rule in Asia Minor, 1 (Princeton 1950), p. 203; G. Vitucci, Il Regno di Bilinia, Studi Pubblicati dall'Istituto Italiano per la Storia Antica 10 (Rome, 1953), p. 103 and n. 3; E. Will, Histoire politique du monde hellénistique, 2 (Nancy, 1967), p. 396.



"invaded" the land and adds later that Mithridates expelled the latter's garrisons (or camps) and restored the kingdom to his nephew, all of which would indicate that the Bithynian had come at the head of an army and had established himself by force of arms as virtual ruler of Cappadocia. Moreover, Mithridates reportedly entered Cappadocia on the pretext of bringing assistance to his sister, Laodice, the queenmother. However, Justin then states: "Sed iam Laudice per pactionem se Nicomedi in matrimonium tradiderat." That this was, in fact, a genuine marriage is demonstrated by the woman's decision to join her new husband in fleeing Cappadocia. 11 Now, on two earlier occasions in the second century kings of neighboring lands had entered Cappadocia, each time with the objective not of making war on the royal family there but rather of coming to its assistance. In 157 Attalus II of Pergamum and his army put Ariarathes V Eusebes back on his throne, driving out the latter's half-brother, Orophernes, who had expelled him earlier with the aid of Syrian forces and money.12 Years later Mithridates V Euergetes of Pontus also brought an army into Cappadocia. Elsewhere it has been argued that this last operation, described by Appian as an attack on Cappadocia, has to be understood rather as a rescue mission.¹³ Both incursions, that is, were made in response to troubles within the kingdom. Moreover, each entailed a marriage tie between the invader and the royal family: Attalus II was the brotherin-law of Ariarathes V,14 and Mithridates V became (or already was) the father-in-law of Ariarathes VI, the beneficiary of his action.¹⁵ The resemblance to the Bithynian operation is striking at each point.



¹¹ Just. 38.2.4. See Reinach, Mithridates Eupator (above, n. 8), p. 89; RE 12 (1924), s.v. "Laodike" (28), col. 710 (Stähelin); J. Seibert, Historische Beiträge zu den dynastischen Verbindungen in hellenistischer Zeit, Historia Einzelschriften 10 (Wiesbaden, 1967), p. 117.

¹⁸ Polyb. 32.10–12. For discussion, see J. Briscoe, "Eastern Policy and Senatorial Politics, 168–146 B.C.," *Historia* 18 (1969), pp. 49-70, esp. p. 57; J. Hopp, *Untersuchungen zur Geschichte der letzten Attaliden*, Vestigia 25 (Munich, 1977), pp. 59–68.

¹⁸ App. Mith. 10.30. See D. G. Glew, "Mithridates Eupator and Rome: A Study of the Background of the First Mithridatic War," Athenaeum (1977), pp. 381-86.

¹⁴ RE 4A (1931), s.v. "Stratonike" (11), cols. 321–22 (Geyer).

¹⁵ According to Justin 38.1.1-3, at the time of his death Ariarathes VI was married to Laodice, the daughter of Mithridates V (and the sister of Mithridates VI) who later married the king of Bithynia.

Furthermore, although there is no evidence of a renewal of civil strife in Cappadocia late in the second century, Gordius, the assassin of Ariarathes VI and a pretender to the throne, was still on the scene many years later. Perhaps one may surmise, therefore, that Nicomedes used a recurrence of trouble within the land as an excuse for entering it with his army, presenting himself as the solution to the royal family's problems. Certainly an expedition to rescue the beleaguered king of Cappadocia would have appealed to a monarch who could be styled the true heir of the Attalids. 17

And then, disaster. If the Bithynian forces (with their garrisons or forts) were clustered in the northwestern portion of Cappadocia, retreat to home territory would have been direct and relatively easy. But by the time of Mithridates' attack they must have managed to pacify most of Cappadocia; otherwise Laodice would not have agreed to the marriage that got her into such trouble, or so one would think. It is more likely, therefore, that Nicomedes' troops had taken up positions at a number of points in Cappadocia outside the northwest, making it very easy for Mithridates to cut them off if he invaded through Galatia.¹⁸



¹⁶ Just. 38.1.6-7 and 10, 38.2.1 and 5; App. Mith. 65.273.

¹⁷ Pseudo-Scymnus, *Periegesis*, lines 50-54 (C. Müller, *Geographi Graeci Minores*, vol. 1 [Paris, 1855]). Concerning the identity of the king, Nicomedes, praised by the author of the *Periegesis*, see M. Rostovtzeff, *The Social and Economic History of the Hellenistic World*, 3 (Oxford, 1953), p. 1530, n. 107. The evidence regarding the career of Nicomedes III is summarized by Reinach, "Un nouveau roi de Bithynie" (above, n. 2). Mazaca, the Cappadocian capital, was unwalled, making it all the likelier that Nicomedes' bold action would succeed: Str. 12.2.7.

¹⁸ I am not aware of a discussion of the roads of Cappadocia at the time of the kings, but the major highways probably would have corresponded largely with those known from the Roman period. During the empire the most direct route from Bithynia to Mazaca (no. 92 in the numeration of Konrad Miller) led from Nicaea via Ancyra, a distance of 430 Roman miles: K. Miller, *Itineraria Romana: Rōmische Reisewege an der Hand der Tabula Peutingeriana*, 2nd. ed. (Leipzig, 1929; reprt. Rome, 1964), pp. 655–61. This was approximately a three week march at the "military pace" of 20 m.p. daily (G. R. Watson, *The Roman Soldier* [Ithaca, 1985], pp. 54–55). Mithridates may have invaded along the highway connecting Amisus, Amasia, and Zela and leading to Mazaca (J. A. R. Munro, "Roads in Pontus, Royal and Roman" (*JHS* 21 [1901], p. 52), in which case he would not have been well situated to prevent Nicomedes from escaping to his kingdom. But if the Roman road joining Tavium, in the land of the Galation Trocmi, and Zela already existed (no. 96 in K.

Under these circumstances it may be significant that Nicomedes, hitherto a ruler of considerable pretentions, never contested his defeat on the battlefield. He had been soundly beaten.

But the setback apparently was not as crushing as it might have been. There is no sign in Justin that the Pontic forces followed up their victory in Cappadocia by entering Bithynia, nor does the same source's account of the appearance subsequently of Pontic and Bithynian envoys before the Roman Senate indicate that Nicomedes had lost any land to Mithridates. Whatever else he may have done to punish Nicomedes, the king of Pontus at least did not lead his troops into Bithynia.

The second source of evidence is the coinage of Nicomedes III. It offers evidence for the history of his reign that has not received close attention since Reinach wrote the Bithynian section of the Recueil général des monnaies grecques de l'Asie Mineure. By examining casts or photographs gathered from the major public collections and by reviewing photos in the catalogues of other collections and of private coin dealers it has been possible to trace the activity of the Bithynian mint(s) during the period of Nicomedes' rule in some detail.

Table 1
Tetradrachms of Nicomedes III Euergetes

B.E.	B.C.	Monograms	Obv. Dies	Rev. Dies	Coins
180	118/7	3	5	5	7
181	117/6	2	6	9	14
182	116/5	1	1	1	1
183	115/4	2	4	7	15

Miller, p. 678 and fig. 222, pp. 675–76), which seems entirely possible in view of Zela's early importance, Mithridates may first have proceeded to Tavium, 100 m.p. or five days' march from Amasia (K. Miller, p. 678), and then from Tavium to Ancyra, which by the direct route lay no more than 90 m.p. away (K. Miller, p. 671). As it happens, the Roman roads linking Ancyra and Mazaca add up to 191 m.p., almost exactly the same distance. Thus, if the Pontic troops set out from Amasia even just a day before the news of their departure reached Nicomedes in Mazaca, Mithridates would have reached Ancyra before Nicomedes and would, therefore, have been in a good position to disrupt the Bithynian retreat.



¹⁹ Just. 38.2.3-6.

184	114/3	3	13	18	24
185	113/2	3	5	5	7
186	112/1	1	2	7	7
187	111/10	3	6	10	17
188	110/9	3	4	9	9
189	109/8	3	4	6	6
190	108/7	3	4	4	11
191	107/6	4	4	5	5
192	106/5	3	5	8	15
193	105/4	2	3	4	4
194	104/3	0	0	0	0
195	103/2	0	0	0	0
196	102/1	2	3	3	3
197	101/0	3	8	11	14
198	100/99	4	4	5	8
199	99/8	3	5	8	8
200	98/7	2	5	8	10
201	97/6	2	3	4	8
202	96/5	3	6	9	10
203	95/4	2	4	5	7
Totals			104	151	210

Casts or photos of 210 tetradrachms were studied, the earliest from year 180 of the Bithynian era, the apparent date of the accession of Nicomedes III,²⁰ the latest from B.E. 203, a year which was certainly close to his death if not its exact date.²¹ For two years of this twenty-four year period, B.E. 194 and 195, no coins at all were discovered, but for the others the number found in the search ranged from a minimum of a single coin in B.E. 182 to a maximum of 24 in B.E. 184.²² Over the

- ²⁰ I follow here the suggestion of Reinach in RGA; rpt. in Subsidia Epigraphica: Quellen und Abhandlungen zur Griechischen Epigraphik, 5, ed. H. Engelmann and R. Merkelbach (New York, 1976), p. 230, n. 1.
- ³¹ Reinach, Mithridates Eupator (above, n. 8), p. 105 and n. 3. Reinach gave 94 (B.E. 203) only as the approximate date of the king's death: "Der Zeitpunkt ist nicht genau bestimmbar, da die Münzen Nikomedes' II und Nikomedes' III gleiches Gepräge und gleiche Umschrift aufweisen." Shifting the date two or three years earlier or later would not significantly affect the results of the argument developed below.
- In a study appeared as this paper was in press, "Les Derniers Rois de Bithynie: Problèmes de chronologie" (*Revue Belge* 132 [1986], pp. 1-30), François de Callataÿ has asserted that two specimens from B.E. 194 have come to light: "Å l'exception des années Δ?P E?P (194 et 195), le *Récueil général* mentionne un exemplaire au moins de



entire period the average number of coins found per annum is 8.75, the median, 8.0. An average of 4.33 obverse and 6.29 reverse dies were used to strike the extant coins, with a median of 4 and 5.5, respectively.

A monogram engraved on each reverse presumably was intended to indicate the Bithynian official responsible for issuing the coin.²³ Minor variations in the design of monograms are common. In B.E. 180, for instance, coins were struck bearing the monograms R and R; similarly in B.E. 197 there appear two slight variants of a common design element, AY and AY. These changes may have been serendipitous, the whim of the die maker, or they may have had some significance that is now unclear. In any case, it is difficult to believe that in the same year there were two moneyers with practically identical monograms. The occurrence, too, of four closely related monograms²⁴ on coins of B.E. 189, 190, 191, and 192 (Plate 5, 49.3, 54.4, 57.4, 59.1) seems unlikely to signify that four men with virtually identical names held office in as many years. Interestingly, after a three-year hiatus (B.E. 193-95) the second of these monograms reappears on coins of year 196 and then is found again on some of the coins of the next year, B.E. 197 (Plate 6, 69.3, 72.4), when it is joined by a fifth version.²⁵ It would appear that in this case, at least, the die maker was deliberately altering the monogram annually. A similar design sequence may be observed on the coins of moneyer 🖴 of the years 197, 198, and 199 (Plate 6, 77.11, 81.5, 86.8).26

chaque année entre ΞP (160 = 138/7 av. J.-C.) et $EI\Sigma$ (215 = 83/2 av. J.-C.). Le Cabinte des Médailles de Paris a depuis fait l'acquisition d'un tétradrachme daté de l'année 194 (Paris, R4457-1964, 16-44). Un autre exemplaire de cette année a, semble-t-il, été vendu chez Müller (Solingen 18, 23-25 Sept. 1976, 84, 16.09)" (p. 25, n. 106). In response to an inquiry regarding the coin at the Cabinet des Médailles Michel Amandry has kindly informed me "that de Callataÿ has misread the date: it is APP and not Δ " (private letter, April 6, 1987). My reading of the specimen in the Müller catalogue (dated there to B.E. 191) has been confirmed by Nancy Waggoner: "I see what I would say is a faint bar across the middle of the alpha, whereas there is a distinct hiatus between the ends of the two vertical bars. I think that the catalogue reading has to be the correct one" (private letter, March 27, 1987).

- 23 Reinach, RGA, p. 218.
- ²⁴ B.E. 189: **∆Y**; B.E. 190: **∆Y**; B.E. 191: **∆Y**; B.E. 192: AY.
- 25 AY
- **■** B.E. 197: **四**k; B.E. 198: **四**k; B.E. 199: **四**k.



Once allowances are made for minor variations, the maximum number of monograms found on coins of a single year of the reign is reduced to three. To this rule there may be two exceptions, two issues of B.E. 191 and those of B.E. 198, but in these instances, too, the monograms **AY** and **YA**, in the one case, **M** and **YE**, in the other, may indicate the same moneyer. In any event, in eleven of the other twenty-one years for which coins were discovered three moneyers were active, in seven years, two, and in two years, one. The average number per annum over the entire reign is 2.38, the median, 3.0.

How many mints were there in Nicomedes' realm? Reinach once suggested that there were two, at Nicomedeia, the site of the king's court, and at Nicaea.²⁷ On the basis of the number of monograms appearing annually that figure may now have to be adjusted to three. The third mint (if there was one) presumably would have been located at Prusias or at Prusa, the other major cities of the land.²⁸ Some support for the hypothesis that there were three mints in Bithynia is provided by the fact that no die links were discovered between coins issued by the various moneyers of any given year, a sign, perhaps, that they were striking in different places. On the other hand, neither are there any reverse die links connecting the coins of an individual

- Preinach, Trois Royaumes (above, n. 8), p. 130: "On peut...conclure qu'il y avait dans le royaume deux ateliers monétaires principaux (probablement Nicomédie et Nicée), qui fonctionnaient parallèlement." However, in RGA, p. 218, he suggests that the officials may have divided the year among themselves: "Le même monogramme (plus ou moins diversifié dans son dessin) se maintient alors pendant plusieurs années consécutives; très fréquemment deux ou plusieurs monogrammes sont simultanément en usage pendant une même période, soit qu'il y eût plusieurs ateliers monétaires, soit que chaque magistrat ne restât en fonctions que pendant une partie de l'année."
- ²⁸ Concerning the history of Prusias before the annexation of Bithynia by the Romans, see *RE* 23 (1957), s.v. "Prusias (Stadt) (5)," cols. 1134–36 (Dörner); for Prusa, *RE* 23 (1957), s.v. "Prusa ad Olympum," cols. 1077–80 (Dörner). Before its annexation by the Bithynian king, Prusias I, the city that was given his name had struck its own coins: "Prusias (Stadt)," col. 1135. Under the Romans, the Bithynian cities which issued bronze included, in addition to Nicomedeia, Nicaea, and Prusias, the cities of Prusa and Tius: see *RGA*, pp. 575–601 (Prusa) and pp. 615–40 (Tius).



moneyer issued in successive years,²⁹ and only one obverse link was found.³⁰ The almost complete absence of links between moneyers and across years suggests that the Bithynian mint(s) may have cut new dies each year for any moneyer(s) who might be striking there. In any event, from the present evidence it cannot be determined from die sequences alone whether the magistrates of a given year struck in succession at a single mint or struck independently at different places.³¹

It is notable that the dies of each year usually differ from one another very slightly. The coins of B.E. 185, for instance, were struck from five obverse dies (Plate 4: 30.1, 31.2, 32.3, 33.5, 34.5). Three moneyers are attested that year, one of whom used three obverses. These differ in the positions of the two ends of the king's diadem relative to one another and in the relationship between the upright locks over the forehead, among other things. But the profiles and the treatment of nose, eye, chin, and ear are practically indistinguishable and give the impression of being the work of one or, at most, two engravers. For that reason I am inclined on the whole to favor the hypothesis that there was a single mint in Nicomedes' realm, where all the die making was done. However, until that view is tested against the coins of the other Bithynian kings, it must be considered speculative.³²

- There is evidence, however, that reverse dies may occasionally have been reused. See Appendix 2.
- Reverse 17.1 (Plate 4) of B.E. 184 is linked by a common obverse to two reverses, 30.1 and 30.2 (Plate 4), of the next year, B.E. 185.
- ³¹ The modest number of specimens found for an average year, 8.75, relative to the average number of obverse dies, 4.33, means that the series probably is far from complete. The index figure in this case, i.e., the average number of coin specimens per obverse die, is 2.02. Wayne E. McGovern has demonstrated that "when the average index figure for a coin series is 2 or less, the probability is high (0.50 or greater) that at least one full-life obverse die will subsequently appear. Under these conditions, die links are usually scarce and the associated series are normally very short, so that the number of missing dies is estimated to be at least roughly comparable in size to the number of known dies" ("Missing Die Probabilities, Expected Die Production and the Index Figure," ANSMN 25 [1980], pp. 222–23). I am grateful to Arthur Houghton for kindly pointing out to me the relevance of McGovern's conclusions to the evidence under study here.
- ³² A survey of the tetradrachms of Nicomedes' predecessors, still in its preliminary phase, has yielded one obverse die link connecting reverses bearing different monograms (Hirsch 11, 4 May 1904, 305, №, and Hirsch 16, 6 Dec. 1906, 613, 17.1, ♠). The coins in question were issued by Prusias II (Plate 6, A-B).



For the history of the reign of Nicomedes II a particularly interesting element in the numismatic record is the absence of coins bearing the dates B.E. 194 and 195. The argument from silence must always be made with caution, of course, but here the amount and the quality of the evidence are remarkable. The average number of coins per annum for the twenty-four year period is 8.75, with a standard deviation of 5.697. Zero coins is 1.54 standard deviations below the average, which yields a statistical level of confidence of approximately 88 percent. That falls below the minimum of 95 percent required in the natural sciences to reject the null hypothesis, the assumption that the deviation is due to chance.33 But it is close enough to that figure that one has to wonder whether something was not awry in Bithynia during the two years in question. If it is significant that no coins are known from the two years, either the royal mint(s) ceased all activity or at least production must have been reduced to a level well below what obtained at other times.

But it is clear from the numismatic record that a drastic reduction in output cannot have lasted more than a few years. Comparison of data that might give an indication of the level of mint activity in Bithynia before and after the possible hiatus in production yields what seems at first sight to be an interesting discrepancy.

A confidence level of approximately 95 percent requires that the data be at least two standard deviations away from the mean; otherwise the null hypothesis (in this instance, that the reduced number of coins for B.E. 194 and 195 is due to chance) is sustained. See D. Freedman, R. Pisani, and R. Purves, Statistics (Berkeley, 1978), pp. 69–87. Let me stress that I am not arguing that we yet have anything like a full set of the obverse dies used by Nicomedes' moneyers. Expanding on Margaret Thompson's observations in The New Style Silver Coinage of Athens, ANSNS 10 (1961), p. 711, Wayne McGovern (above, n. 31) has shown that only when the "index figure is 6 or above..." can we "place considerable confidence, 95 % or better, that in a series of up to 15 dies, no further full-life die will appear." Since the index figure here is only 2.019, it is very likely that the Bithynian mint(s) employed many more obverse dies than have been discovered so far. My point is that on the evidence presently available we can be 88 percent confident that none of those additional dies will have been from B.E. 194 or B.E. 195.



TABLE 2

Mint Activity

B.E. 180-193

No. of Monograms: 36; average, 2.57; median, 3

No. of Dies: Obv.: 66; average, 4.71; median, 4. Rev.: 98; average, 7.00; median, 6.5

No. of Coins: 142; average, 10.14; median, 8

B.E. 196-203

No. of Monograms: 21; average, 2.63; median, 2

No. of Dies: Obv.: 38; average, 4.75; median, 5. Rev.: 53; average 6.63; median, 8

No. of Coins: 68; average, 8.50; median, 8

On the average, 16 percent fewer specimens per annum have been found after the apparent hiatus. However, application of two statistical tests of significance, Student's T-Test and the Mann-Whitney U-Test, to the two groups of data yielded consistently negative results. The difference in the figures, that is, does not indicate that following the two-year interval there was less activity at Nicomedes' mint(s) than there had been earlier.³⁴

- Both tests begin from the null hypothesis, that the difference between the two samples (the data from before the hiatus, that from after it) is due to chance, and then measure the degree of confidence with which the null hypothesis can be rejected. The T-Test assumes that the data are randomly chosen; the U-Test, a nonparametric or distribution-free test, does not "require the assumption of a normal population" (H. M. Blalock, Jr., Social Statistics, 2nd. ed. [New York, 1972], p. 243). For the sake of comparison both tests were applied, with the same (negative) results. T-values were determined by means of a statistical program on an Apple IIe computer; U-values were calculated using formulas 14.6 and 14.7 in Blalock, p. 257. In the U-Test ties were, as is usual, averaged. For values of U and T see Table G and Table D in Blalock, pp. 567 and 559.
- 1. U-Test. In a 1-tailed test at alpha = 0.05, U and U' are significant only if U \langle = 31 or U' \rangle = 81. (a) Obverse dies, before and after the hiatus: U = 61, U' = 52. (b) Reverse dies, before and after the hiatus: U = 55, U' = 57. (c) Coins discovered, before and after the hiatus: U = 53, U' = 59.
- 2. T-Test. In a 1-tailed test at alpha = 0.05 (20 degrees of freedom), T is significant only if T = 1.725. (a) Obverse dies, before and after the hiatus: T = .03. (b) Reverse



Nor do the coins from previous years give any sure indication of a gradual, mounting crisis affecting the royal finances. In B.E. 193 (ca. October 1, 105, to September 31, 104), it is true, only two moneyers are attested; in each of the preceding six years three had been active. But prior to B.E. 193 there is nothing out of the ordinary and even in that year, of course, the apparent reduction in the number of moneyers may not be real. If there was trouble in the kingdom, then, it must have begun suddenly during B.E. 193 or at the very start of the next year. Moreover, a fiscal crisis that struck at that time would have ended approximately two years later, if the coins can be trusted.

The third source of evidence concerning the situation in Bithynia at about this same time is contained in an excerpt also from Diodorus made by another Byzantine scholar, the patriarch Photios.

At the time of Marius' expedition against the Cimbri the Senate gave authority to Marius to summon assistance from the peoples beyond the sea. Marius sent to Nicomedes, the king of Bithynia, for aid. The latter responded that most of the Bithynians had been carried off by the tax-farmers and were slaves in the provinces. When the Senate then decreed that no free ally was to be a slave in a province and that the governors should attend to the freeing of these, the governor in Sicily at that time, Licinius Nerva, freed numerous slaves in accordance with the decree....³⁶

dies, before and after the hiatus: T=.23. (c) Coins discovered, before and after the hiatus: T=.70.

Both tests sustain the null hypothesis that the difference between the samples is due to chance.

- That all had been well in Bithynia only a few years earlier appears to be demonstrated by an inscription honoring Nicomedes set up by the priest who dedicated a new temple to Isis Nemesis on Delos in 110/9 or, possibly, the next year: Durrbach, Choix d'Inscriptions de Délos 102. W. S. Ferguson, "Researches in Athenian and Delian Documents, 1," Klio 7 (1907), p. 227, suggested that the king was singled out in this way because he had been one of the chief contributors to the building fund.
- Phot. Bibl. 387b3-14 (in the edition of Réné Henry [Paris, 1971], vol. 6, pp. 156-57) = Diod. 36.3.1-2: Κατὰ τὴν ἐπὶ τοὺς Κίμβρους τοῦ Μαρίου στρατείαν ἔδωκεν ἡ σύγκλητος ἐξουσίαν τῷ Μαρίῳ ἐκ τῶν πέραν θαλαττῆς ἐθνῶν μεταπέμπεσθαι συμμαχίαν. Ὁ μὲν Μάριος ἐξέπεμψε πρὸς Νικομήδην τὸν τῆς Βιθυνίας βασιλέα



On the face of it, the story seems to show that there were serious disorders in Bithynia in 104, presumably during the first half of the year. However, the obliqueness of Nicomedes' response has to give one pause. The king answered with a complaint, or so Diodorus seems to indicate. Reinach understood this to mean that Nicomedes rejected Marius' appeal for assistance, an action which he interpreted as a deliberate slap at the Romans.37 Vitucci agreed that Nicomedes had not cooperated, but was even more extreme in his assessment of the king's intentions. Believing that Nicomedes could easily have satisfied the Romans, Vitucci argued that his refusal to do so is a sign of "an attitude of resistance to the Romans and also of protest against some of the less scrupulous systems of their interference in the affairs of the allied state."38 Rostovtzeff, on the other hand, apparently did not doubt the monarch's truthfulness, suggesting instead that it was not the Roman tax-farmers who directly caused Bithynia's woes but rather "the warlike and hostile neighbors of the Bithynians, the professional robbers of Mysia, Phrygia, and especially of Galatia and Pontus." Finally, Badian has proposed that the source of the trouble was the king himself, specifically debts which he had contracted with Roman moneylenders that caused the latter to enslave many of his people.40 There are two views, then, as to why Nicomedes apparently failed to meet Marius'

περί βοηθείας· ό δὲ ἀπόκρισιν ἔδωκε τοὺς πλείους τῶν Βιθυνῶν ὑπὸ τῶν δημοσιωνῶν διαρπαγέντας δουλεύειν ἐν ταῖς ἐπαρχίαις. Τῆς δὲ συγκλήτου ψηφισαμένης ὅπως μηδεὶς σύμμαχος ἐλεύθερος ἐν ἐπαρχία δουλεύη καὶ τῆς τούτων ἐλευθερώσεως οἱ στρατηγοὶ προνοίαν ποιῶνται, τότε κατὰ τὴν Σικελίαν ῶν στρατηγὸς Λικίνιος Νερούας ἀκολούθως τῷ δόγματι συχνοὺς τῶν δούλων ἠλευθέρωσε....

- ³⁷ Trois Royaumes (above, n. 8,), p. 119. Magie (above, n. 10), vol. 2, p. 1093, n. 57) agrees that the king refused to send aid but gives no explanation. Assistance during wartime was, of course, one of the chief responsibilities of all allies of Rome: P. C. Sands, The Client Princes of the Roman Empire under the Republic (Cambridge, 1908; rpt. New York, 1975), p. 135.
 - ³⁸ Vitucci (above, n. 10), p. 101.
 - Rostovtzeff (above, n. 17), vol. 2, p. 782, and vol. 3, p. 1514, n. 49.
- ⁴⁰ E. Badian, Roman Imperialism in the Late Republic (Ithaca, 1968), pp. 54 and 73, Publicans and Sinners: Private Enterprise in the Service of the Roman Republic, rev. ed. (Ithaca, 1983), pp. 87–89. Badian's hypothesis has been accepted by B. F. Harris, "Bithynia: Roman Sovereignty and the Survival of Hellenism," Aufstieg und Niedergang der römischen Welt (1980), p. 864.



request: either he meant to insult the Romans or he was genuinely unable to help them because raiders had carried off many of his people or because he himself had brought about their enslavement.

But evidence that Reinach and Vitucci apparently overlooked makes it likely that the king responded positively to the Roman appeal. Later in the same excerpt from Diodorus it is reported that early in 103 a contingent of Bithynian troops saw action in Sicily. To be sure, these must have been a small group: 800 men is the number given for a force consisting of Bithynians, Thessalians, and Acarnanians.⁴¹ However, their presence in Sicily would seem to rule out the possibility that Nicomedes simply rebuffed Marius, declining to provide any assistance at all to the Romans in their time of need. That this is not stated explicitly at the appropriate point in the account is probably due to Photios. In his excerpts the patriarch frequently abridges or compresses the text of his source, leaving out matters that do not bear directly on his chief interest.42 Here, concerned primarily with the outbreak of fighting in Sicily, he rushed through the Bithynian episode as quickly as possible, as other evidence shows.43 He did not reproduce Nicomedes' full response to Marius as this was reported by Diodorus.

Thus the main support of Reinach's interpretation and of Vitucci's disappears. Nor does Rostovtzeff's reading of the episode appear to make complete sense of it. Although his suggestion regarding the identity of the gangs raiding Bithynia helps to explain the mechanics of the affair, Rostovtzeff leaves unanswered what is perhaps the most interesting question of all, how a king as rich and ambitious as Nicomedes III



⁴¹ Phot., Bibl. 390a4-11 (Henry, above, n. 36, p. 164) = Diod. 36.8.1: Προχειρίζεται δὲ κατὰ τῶν ἀποστατῶν ἡ σύγκλητος τῶν 'Ρωμαίων Λεύκιον Λικίνιον Λούκουλλον, ἔχοντα στρατιώτας μυρίους μὲν καὶ τετρακισχιλίους 'Ρωμαίους καὶ 'Ιταλούς, Βιθυνοὺς δὲ καὶ Θετταλοὺς καὶ 'Ακαρνᾶνας ὀκτακοσίους....

⁴² T. Hägg, Photios als Vermittler Antiker Literatur: Untersuchungen zur Technik des Referierens und Exzerptierens in der Bibliotheke, Studia Graeca Upsaliensia, 8 (Uppsala, 1975), pp. 116, 192-93 and 202-3.

⁴³ For example, the Senate reportedly authorized Marius to contact the peoples beyond the sea (ἔδωκεν ἡ σύγκλητος ἔξουσίαν τῷ Μαρίῳ ἐκ τῶν πέραν τῆς θαλαττῆς ἔθνῶν μεταπέμπεσθαι συμμαχίαν [above, n. 36]), and given the magnitude of the northern crisis it is difficult to believe that the consul limited his efforts to Bithynia or that Posidonius failed to note, at least briefly, the appeal to other eastern allies. Yet in the patriarch's summary we hear only of Nicomedes.

Euergetes could ever have been handled so badly by mere bandits. Badian, on the other hand, makes a very useful observation in this last connection but fails to clarify several other matters. The Senate's action indicates that Nicomedes was complaining about the treatment of his subjects, not simply reporting it. If the king himself had entered into a contract that created the problem, it is difficult to see what basis he would have had for his complaint or the Senate for its response. Moreover, the senatus consultum mentioned by Diodorus concerned free persons, whom Nicomedes could not have used as security for personal debts. That is, the indebtedness of the king would not have resulted directly in the enslavement of free Bithyinians.

However, Badian's chief point, that debt was involved in the crisis, is convincing. Bithynia was a wealthy land, Nicomedes III a conspicuous consumer in the grand style of hellenistic monarchs, scattering benefac-

- ⁴⁴ The evidence concerning Bithynia's wealth and Nicomedes' generosity is assembled by Reinach (above, n. 2). See, too, Rostovtzeff (above, n. 17), vol. 2, pp. 827-28. To judge by his remarks concerning the incident, Rostovtzeff did not believe that Nicomedes' circumstances at the time were at all unusual (also, vol. 2, pp. 782-83).
- ⁴⁶ The verb διαρπάζω, which occurs in the phrase τοὺς πλείους τῶν Βιθυνῶν ὑπὸ τῶν δημοσιωνῶν διαρπαγέντας δουλεύειν ἐν ταῖς ἐπαρχίαις, is used elsewhere in excerpts from Diodorus' account of the Sicilian slave war in connection with the plundering of a captured camp (Phot. Bibl. 388b20 [Henry, above, n. 36, p. 160] = Diod. 36.4.6) and the looting of wealthy landowners' homesteads (Diod. 36.11.1), while the related noun, ἀρπαγή, appears twice, both times in conjunction with παρανομία (Phot. Bibl. 389a39 [Henry, p. 162] = Diod. 36.5.6; Diod. 36. 11.1). Clearly Nicomedes meant that his people had been the victims of unjustified and violent attacks. The language attributed to him also seems to allude to common themes of anti-Roman propaganda in the east, especially the charges that the Romans were the communis omnium hostis and latrones gentium. See discussion in L. Castiglioni, "Motivi anti-romani nella tradizione storica antica," Rendiconti Istiluto Lombardo, ser. 2, 61 (1928), pp. 623–39.
- The Bithynian *laoi* presumably had the same legal status as the *laoi* of other hellenistic monarchies. Their king, then, could alienate the land on which they lived, just as he could alienate any of the rest of his property, but the *laoi* themselves were not his to give away. See discussion in P. Briant, "Remarques sur 'laoi' et esclaves ruraux en Asie Mineure hellénistique," *Actes du Colloque 1971 sur l'Esclavage* (Paris, 1972), pp. 93-133. It is difficult to see, therefore, how they could have served as collateral in loans.



tions far and wide during much, if not all, of his reign.⁴⁷ His kingdom was not wracked by the dynastic struggles that for generations weakened royal power in Cappadocia, nor do the sources give any sign that before 88 it was ever seized by Mithridates of Pontus, its only neighbor strong enough to have done so.48 Even after Nicomedes' defeat in Cappadocia, then, Bithynia's farms, mines, etc., would have been able to continue production, allowance being made, of course, for the problems inevitable under such circumstances and for delays in ordinary administrative routines resulting from them. 49 A prolonged drought or a series of other natural disasters might help to explain the troubles implied by Diodorus, but there is no evidence that such occurred. If Nicomedes could not defend his subjects, therefore, the revenue that they apparently generated throughout his reign cannot have been reaching him for a time. Rather, it must have been going to a creditor or creditors of one sort or another. The weakness of the king attested by Diodorus was indeed due to debt, as Badian surmised.

But it is not likely to have been a debt of the ordinary sort. Had Nicomedes' creditors been private parties, it is difficult to imagine why he would have abandoned his subjects, as appears to have happened, instead of defaulting on his obligation or renegotiating the terms to which he had agreed. Bithynia's plight is more readily explained if the Bithynian note was held by another king or by a government powerful enough to guarantee that its claims would not be ignored.



⁴⁷ See Reinach (above, n. 2).

⁴⁸ In Photios' summary of the letter to Marius nothing is said about a Pontic attack on Bithynia. Likewise, there is no indication of such a development in Justin's description of the Pontic king's activities before the First Mithridatic War (Just. 37.3–38.3) or in his account of the visit of Bithynian ambassadors at Rome after the death of Ariarathes VII. Nor does Mithridates himself refer or allude to an invasion of Nicomedes' land in the speech that Pompeius Trogus attributes to him (Just. 38.4–7). Finally, Appian does not hint at such a possibility: see, e.g., Mith. 13.42–46 (speech of the ambassadors of Nicomedes IV) and 112.540–550 (summary of Mithridates' achievements). In one or another of these instances the silence of the source might be due to abridgment, but it is difficult to believe that this would hold true of them all.

⁴⁹ Concerning the Bithynian economy, see Rostovtzeff (above, n. 17), vol. 2, pp. 827-29.

What had happened can perhaps be determined by considering the relationship of the literary evidence to the numismatic record. The coins alone do not quite justify the conclusion that something was seriously wrong in the kingdom during B.E. 194–95, but Diodorus supplements them with the information that early in 104 Nicomedes was unable to defend free-born Bithynians from the attacks of slavers or their agents, a sign of exceptional circumstances indeed. Marius must have written to the king no more than ten months before the beginning of B.E. 194 and the latter's response, including the indictment of the publicans, presumably was drafted at least a month or more thereafter, in February or possibly March of 104 B.C.⁵⁰

That is, between the troubles in Bithynia implied by Nicomedes' complaint, which sound serious enough to have disrupted operations at the royal treasury and mint(s), and the start of the first Bithynian year for which there are no coins, there is an interval of just eight or nine months, at most. It does not seem imprudent to suggest, therefore, that the crisis alluded to in the fragment from Diodorus is reflected in the numismatic record. As part of that emergency, the Bithynian mint(s) reduced production markedly or perhaps even suspended operations entirely.

If this supposition is correct, it becomes apparent that Diodorus has preserved only a faint clue as to the magnitude of Nicomedes' problem. For at least two years, on the present argument, most or all of the royal revenues of Bithynia were being directed to another king or government. The debt that Nicomedes had contracted was singular not only for the severity with which payment was enforced, requiring him to leave his people defenseless, but also for its size. The Roman Senate excluded, only one ruler in the region was strong enough to impose such conditions: Mithridates of Pontus. But Mithridates would not have

Marius triumphed over Jugurtha on January 1, 104 (Sall. *Iug.* 114; *Fast. Triumph.* [104 B.C.]), while B.E. 194 began at about October 1, 104. If Marius wrote in mid-January, his letter would have reached Nicomedeia in about three weeks if it was borne by courier, as presumably it was. (Aristides made the journey from Rome to Miletus in winter in fourteen days: W. Riepl, *Das Nachrichtenwesen des Altertums* [Berlin, 1913; rpt. New York, 1972], p. 206). A letter from Rome, carried by a messenger of the tax-farmers, reached Cicero in Cilicia in forty-seven days: Riepl, p. 205.



done so prior to the Bithynian defeat in Cappadocia, for during the preceding years Nicomedes had been his partner. It follows that the crisis which both Diodorus and the coins point to must have occurred after Nicomedes' humiliation in Cappadocia and his inglorious flight with Laodice. Under such circumstances the debt would probably have been an indemnity imposed by Mithridates, set in the name of reimbursing Ariarathes and/or Mithridates for costs incurred in "liberating" Cappadocia from Bithynian rule.

Linking the various pieces of evidence in the fashion just suggested, the episode can be reconstructed as follows. Developments in Cappadocia led Nicomedes III to enter the kingdom with his army probably in the summer of 105 B.C. (B.E. 192).⁵¹ Perhaps acting nominally in defense of the interests of the royal family, he was rewarded with the hand of the queen-mother, Laodice. Mithridates then burst onto the scene, crushing all resistance and sending Nicomedes and his bride fleeing for Bithynia. Since Marius presumably addressed his letter to Nicomedes early in the consular year 104, the Pontic counterattack

⁵¹ Justin's account gives the impression that Nicomedes was expelled from Cappadocia not long after arriving. If this occurred in B.E. 193 (106/5 B.C.), the coins of the next year would be difficult to explain on the present reconstruction. On the other hand, if Nicomedes invaded in the summer or early fall of 105 B.C. (B.E. 192) and then was defeated in October or early in November, after his mint(s) had had a month or six weeks in which to issue coins for B.E. 193, the evidence makes sense. On this chronology, the problem to which Nicomedes referred in his letter to Marius developed during the winter between 105 and 104 B.C. It should be added that Mithridates could have campaigned on the Cappadocian plain in October or November, as this suggestion requires. In 189 the consul, Cn. Manlius Vulso, ended operations in Galatia in mid-autumn from concern about the cold (Livy 38.27.9). Also, in 68, following his victory at Artaxata to the east of Cappadocia, Lucullus reportedly was taken by surprise by severe winter storms at the time of the fall equinox (Plut. Luc. 32.1-2), the date at which the Bithynian year began. Evidently he had not expected problems from the weather for some time to come. A distinguished German visitor to Turkey in the last century, Helmuth von Moltke, reportedly observed the grain ready to be harvested on October 4 on the high plateau south of Sivas (Sebasteia) in Pontus: "Auf der 4000 bis 5000 Fuss hohen Ebene . . . stand am 4. October das Korn noch auf dem Halm..." (Karl Ritter, Die Erdkunde im Verhältnis zur Natur und zur Geschichte des Menschen, oder Algemeine, Vergleichende Geographie . . ., 2nd. ed. [Berlin, 1858], vol. 18, pt. 1 [Vergleichende Erdkunde des Halbinsenlandes Klein-Asien], pp. 269-70. This district has a long, rugged winter (see, e.g., Ritter, p. 262).



probably occurred in October or November of 105 B.C., after the beginning of B.E. 193 (105/4 B.C.), when campaigning was still possible on the plain of Cappadocia. The Bithynian coins that have survived from that year presumably were struck during those months, to support Nicomedes' army. In Bithynia, the king's return was followed by a severe fiscal crisis that lasted for at least two years (B.E. 194-95), if not somewhat longer, and by serious disorders in the countryside, including attacks on the rural population by gangs interested in selling kidnapped persons into slavery. Since neither problem is likely to have developed had Nicomedes been free to use his property as he wished, evidently he had been forced to make a substantial payment in his settlement with Mithridates. Not that the king's resources were utterly exhausted. Rather than rebuff Marius completely, Nicomedes sent troops who served in Sicily, but their number was small.⁵² Apparently they were a token of Bithynia's fides, a shrewd way of guaranteeing support for Bithynian interests in the Roman Senate but little more than that.⁵³ To judge by the numismatic evidence, the crisis ended rather suddenly, production of coins resuming in B.E. 196 (ca. October 1, 102 B.C. to ca. September 31, 101 B.C.) at a level that appears unexceptional. The debt to the victorious king of Pontus apparently had been repaid with the royal revenues of about two years.

If this hypothesis has merit, the two types of evidence, literary and numismatic, can be seen to illuminate and perhaps to confirm one another. Justin and Diodorus were both alluding to the same crisis in Bithynia, not to two different sets of troubles as scholars have thought,⁵⁴ and the dates of the Bithynian expedition to Cappadocia and of Nicomedes' defeat at the hands of the king of Pontus prove to have been several years earlier than has been realized. Also, on this argu-

- 58 The excerpt from Diodorus (above, n. 36) suggests that the Bithynians started operations in Sicily as soon as the campaigning season began in 103. Evidently they arrived during the winter or late in the preceding campaigning season.
- lf Nicomedes' language actually echoed charges against the Romans that had long been heard in the east, as the excerpt from Diodorus suggests (above, n. 45), the explanation may be that he hoped its use would alarm the senators and galvanize support among them for his request.
- Perhaps the connection escaped notice because no one thought to question the late date that Reinach and Meyer (above, n. 8) gave to the Bithynian setback in Cappadocia.



ment the expulsion of Nicomedes must have been separated from the murder of Ariarathes VII by considerably more than a matter of months, contrary to the accepted interpretation of Justin's account and of his phrase "interiectis mensibus." Sceptics who believed that the interval had to be longer are right.⁵⁶

CATALOGUE

THE SILVER TETRADRACHMS OF NICOMEDES III

All of the tetradrachms of Nicomedes III of which I have been able to discover photographs or to obtain casts are listed below. The evidence was gathered from a number of sources. Casts were kindly provided by the American Numismatic Society (all the coins of the king in the collection), the Bibliothèque Nationale, Paris (coins of the decade B.E. 190-200), and the Staatliche Museen zu Berlin (coins of the decade B.E. 190-200). Photos of all the specimens in the collection of the British Museum were also kindly made available for study. The following catalogues were used: de Luynes, de Hirsch, Hunter, Jameson, Weber, BMCBithnia, and the various sylloge volumes that have been published to date. Two articles, cited hereafter by the authors' last names, also were consulted: P. Pollak, "A Bithynian Hoard of the First Century B.C.," ANSMN 19 (1974), pp. 45–74, and F. S. Kleiner, "The Giresun Hoard," ANSMN 16 (1970), pp. 5-25. Finally, photographs that have

Thus, e.g., RE 2 (1895), s.v. "Ariarathes" (7), col. 819 (Niese): "Nach Iustin müsste A. nur einige Monate regiert haben, aber sein Bericht ist durch starke Verkürzung entstellt..." So, too, G. Daux (above, n. 7), p. 78: "L'abréviateur rapproche beaucoup trop ces événements du meutre d'Ariarathe Epiphane," and p. 80, n. 2, "il suffit d'admettre que les mois (mensibus) dont parle Justin pour le règne effectif d'Ariarathe, après sa restauration par Mithridate, représentent non pas une fraction d'année, mais une annee et demie ou deux." Concerning the interpretation of Justin's Latin, see above, n. 9.

56 For assistance in gathering information regarding specimens and for casts or photographs of coins I am very grateful to Nancy Waggoner, American Numismatic Society, N.Y.; Ulla Westermark, Kungl. Myntkabinettet, Stockholm; Martin Price, British Museum, London; H. D. Schultz, Münzkabinett, Staatliche Museen zu Berlin; Mando Oeconomides, Numismatic Museum, Athens; Dominique Gerin, Cabinet des Médailles, Bibliothèque Nationale, Paris; and Daphne Nash, formerly of the Heberden Coin Room, Ashmolean Museum, Oxford.



appeared in the catalogues of private coin dealers were available in the photo file of the American Numismatic Society. To supplement that evidence, the following dealers' catalogues were checked systematically: Glendining, 1976-82; G. Hirsch, 1971-Jan., 1983; Kölner Münz., Nov. 1968-Oct. 29/30, 1979; Kress, Nov. 1973-Mar. 1983; Kricheldorf, June 15/6, 1965-Dec. 4, 1982; Kurpfälzische Münz., Sept. 1971-Dec. 1982; Lanz, Apr. 18, 1978-1982; Münz Zentrum, Nov. 23, 1978-Nov. 10, 1982; Peus, Oct. 28-30, 1980-Oct. 12/5, 1982; Sotheby's, Jan. 1975-Dec. 1982. Other catalogues and fixed price lists were examined when available.

The unsatisfactory quality of many of the photos limited their usefulness considerably. Since all of the coins are dated and since the number of dies used in any given year is never high, it has almost always been possible to sort out the dies of particular years. But it would be imprudent to claim to have discovered die links between issues of different years if the identification were at all doubtful. As a result, my conclusions in that regard may be excessively conservative. For the same reasons I have decided against trying to identify dies that may have been recut, preferring instead to treat each die that differs in any way from the rest as new. If recut dies have been overlooked, my figures will be somewhat inflated.

The catalogue is arranged chronologically following the Bithynian era dates. The observe dies are numbered sequentially though the series, from 1 in B.E. 180 through 104 in B.E. 203. Reverse dies are renumbered for each year. Coin 1.2 is obverse die 1 in the entire series and reverse die 2 in year 180; coin 22.6 is obverse die 22 in the entire series and reverse die 6 in year 184. Illustrated coins are followed by an asterisk.

Obv.: Diademed head of Nicomedes II Epiphanes r.

Rev.: ΒΑΣΙΛΕΩΣ ΕΠΙΦΑΝΟΥΣ NIKOMHΔΟΥ Zeus Stratios [?] standing l., l. hand resting on scepter, r. hand extending crown over king's name. In field, eagle l. above lightning bolts; below, monogram and date.

YEAR 180

R. E

1.1 Naville, 4 Apr. 1921 (Pozzi), 2152, 16.53; Ratto, 24 June 1929 (Rogers), 2152, 16.55



1.2	ANS, 16.18
2.2	ANS, 16.92
3.3	Peus, 12-15 Oct. 1982, 16.39
	Ж
4.4	Berlin
5.5	BM; Copenhagen Cast Coll. 4227
YEAR	181

R, E

- 6.1 BM
- 6.2 Berlin (v. Knobelsdorf, 1822), 15.74; Kleiner 27, 16.54
- 7.3 ANS, 16.74
- 8.4 Schlessinger 13, 4 Feb. 1935, 1126, 16.2
- 8.5 RGA, pl. 33, 1, 16.51; Berlin, 16.66
- 9.6 *SNGCopBithynia* 648, 16.56
- 10.7 Kress 116, 28 Oct. 1960, 379, 16.2; Hirsch 37, 10-11 Dec. 1963, 230; Dorotheum 253, 23-24 Oct. 1962 (Hollschek Coll.), 471, 16.3
- 10.8 BM (von Aulock); Kölner Münz., 12-13 Dec. 1969, 33, 16.05

r**g**er

11.9 Egger 41, 18 Nov. 1912, 527, 16.78

YEAR 182

R

12.1 BM

YEAR 183

%,

- 13.1 ANS, 16.84 = Pollak 16
- 13.2 Hunter 2, p. 262, 8, 15.71
- 13.3 Schulman, 17-19 May 1938, 1360, 16.77
- 13.4 Kress 159, 1-2 Apr. 1974, 433, 17.75
- 14.4 Kress 155, 3 Oct. 1972, 377, 17.75
- 15.5 Berlin, 17.26; Berlin, 16.75; Sotheby's, 6 July 1921, 305; SNGDavis 238,
 20 [sic]; Feuardent, 17 Dec. 1919, 308; A. Hess, Oct. 1972, 377, 17.75;
 Hamburger, 12 June 1930, 792, 14.15; Stack's, 30 Apr.-1 May 1964, 442

烨

- 16.6 BM
- 16.7 Spink USA 4, 10–11 Nov. 1983, 550



1 17.1* BM18.2 Schlessinger 13, 4 Feb. 1935, 1127, 16.2 19.3 Grabow, 9-10 July 1930, 463, 16.6 20.4 Glendining, 7-8 Mar. 1957, 256, 16.45 21.5 Kleiner 28, 16.77 22.6 **Berlin** 23.7 Kricheldorf 20, 16-17 May 1969, 128 = Kricheldorf 16, 1-2 July 1966, 112 1201 24.8 Rosenberg 72, 11 July 1932, 558, 16.75; Cahn 71, 14 Oct. 1931, 415, 16.90; Cahn 80, 27 Feb. 1933, 328, 16.90; Ratto, 8 Feb. 1928, 584, 16.7; Naville, 4 Apr. 1921 (Pozzi), 2151, 16.66 25.8 Cahn 66, 9 May 1930, 288, 16.85; Hess 202, 28 Oct. 1930, 2558, 16.9 26.9 Berlin 26.10 Berlin 26.11 Stack's, 10-11 June 1970, 335, 16.7 26.12 26.13 Malter 25, 1970, 68, 16.4 27.14 Kölner Münz., 24-26 Oct. 1974, 104, 16.69 27.15 Münz Zentrum 24, 12 May 1976, 144, 16.45 27.16 Superior, 15 June 1976, 481 28.17 Malloy, 28 Feb. 1972, 99 29.18 Meyers-Adams 5, 15-16 Mar. 1973, 182 **YEAR 185**

YEAR 184

1

- 30.1* Berlin, 16.41
- 30.2* Hirsch 33, 17 Nov. 1913, 813, 16.65
- 31.2* Schlessinger 12, 26 Feb. 1934, 276, 16.85
- 32.3* Berlin; Glendining, 3 June 1976, 21

33.4* RGA, pl. 33, 2, 16.82

1

34.5* Münz. u. Med. FPL 331, Feb. 1972, 9, 16.76

YEAR 186

14

35.1 BM



48	Dennis G. Glew
35.2	Sotheby's, 30 Mar. 1977, 35
35.3	Berlin
36.4	ANS, 16.72
36.5	Bourgey, 15-17 Dec. 1909, 170
36.6	Coin Galleries, 24 May 1972, 124, 16.59 = Coin Galleries FPL 3, 1970,
	B.42, 16.56 = Coin Galleries FPL 3, 1969, c.28, 16.56
36.7	Glendining, 3 June 1976, 21
YEAR 187	7
	MR.
37.1	ANS, $16.33 = Pollak 17, 16.49$
38.2	P. Naster, Coll. Hirsch, 1440
38.3	SNGvAulock 263, 16.37
38.4	Hirsch 11, 3-5 Oct. 1961, 1522; Hess 219, 17 Oct. 1933, 74, 16.9; Cahn 61,
	3-4 Dec. 1928, 133, 16.91
38.5	ANS, 16.58; Platt, 11 May 1921, 93
39.6	Hamburger, 17 June 1908, 568; Hess, 18–19 Mar. 1918, 656, 16.8
39.7	Berlin
	16P
40.8	Sotheby's, 22 Apr. 1970, 186, 16.50; Spink 4, 1972, 3830; Coins and Antiquities FPL 6, 1970, G614, 16.50
41.9	Coin Galleries, 18 Aug. 1978, 258 = Glendining, 11-12 Dec. 1975, 88, 16.72
	⊊
42.10*	Glendining, 9 Mar. 1931, 1115, 16.85; Hirsch 107, 6–8 Dec. 1977, 2331, 16.14
YEAR 188	3
	leP
43.1	Superior Stamp and Coin, 7-8 Dec. 1972, 183
44.2	Helbing 70, 9 Dec. 1932, 654, 16.5
44.3	BM = Copenhagen Cast Coll. 4229
	MR.
45.4	Berlin (Prokesch-Osten, 1875), 16.39
45.5	Coin Galleries, 18 July 1973, 248, 16.05
45.6	SNGCopBithynia 649, 15.34
45.7	Paris 124, 16.60
45.8	Cahn 60, 2 July 1928, 755, 16.70
	5
46.9	BM



YEAR 189 Z 47.1* Paris 125 (ex Wadd. 594), 16.83 48.2 Ciani, 12 Dec. 1921, 69 AY 49.3* BM49.4* Coin Galleries FPL 4, Sept. 1960, A512 **P** 50.5 Glendining, 29 Apr. 1954, 28, 15.79 50.6 Schulman Coin & Mint, 19-20 Mar. 1973, 286 **YEAR 190** å

- 51.1 Berlin, 16.75
- 52.2 Paris 127 (ex Wadd. 601), 15.55; ANS, 16.81; Hirsch, 9–10 Dec. 1965, 1661, 16.71; RGA, pl. 33, 4, 17.10; Cahn (Walcher de Moltheim), 25 Feb.-2 Mar. 1901, 1848a, 16.85; Bourgey, 3–5 Dec. 1928, 99; Bourgey, 14 Dec. 1934, 93; Stack's, 4–7 May 1960 (Neumoyer), 113

YA

53.3 Paris, 126 (ex Wadd. 595), 16.33 = RGA, pl. 33, 3

AY

54.4* Schlessinger 13, 1935, 1128, 16.2

YEAR 191

FR

55.1 Berlin (Löbbecke, 1906), 16.25

•

56.2 Paris 128, 16.75

AY

- 57.3 BM
- 57.4* Coin Galleries, 25 Nov. 1969, 1087, 16.33

YA

58.5 Knobloch FPL 34, Oct. 1968, 1083

YEAR 192

AY

59.1* Paris 129, 16.59

TEP

60.2 Berlin (Imhoof-Blumer), 16.38



61.3	Platt, 3-4 Apr. 1933, 150; Naville 15, 2 July 1930, 900, 16.66; Cahn FPL 24, Nov. 1912, 631, 16.0
61.4	Naville 15, 2 July 1930, 899, 16.49; Pollak 18, 16.49
61.5	M. G. Lee, 10–11 May 1954, 342, 16.45
61.6	Ratto, 13 May 1912, 879, 16.65
62.7	H. M. F. Schulman, 26–28 May 1970, 138, 16.1; Coin Galleries, 23 Mar. 1971, 43; Coin Galleries, 14 Feb. 1973, 37, 15.92; ANS photo file, no provenance given, 116
63.8	Coins and Antiquities FPL 4, 1972, G215, 16.7; Malloy, 12 Mar. 1976, 106
YEAR 193	
64.1	P. Naster, Coll. Hirsch, 1441, 16.7
	RP .
65.2	Paris 130 (ex Wadd. 596), 16.97
66.3	Hess 194, 25 Mar. 1929 (Vogel), 312, 16.85
66.4	IGCH 2056
YEAR 194	
YEAR 195	
YEAR 196	
	AR .
67.1	Paris 130, 15.60
	AY
68.2	Schlessinger 11, 26 Feb. 1934, 274, 17.0
69.3*	ANS, $16.76 = Pollak 19$
YEAR 197	
	AR .
70.1	Egger, 10 Dec. 1906, 401, 14.65; Hirsch 37, 10-11 Dec. 1963, 234
71.2	Paris 132, 16.49
71.3	BM
	AY
72.4*	Paris 133 (ex Wadd. 597), $16.67 = RGA$, pl. 33, 5
72.5	BM
73.6	Berlin (Prokesch-Osten, 1875), 16.58
73.7	Royal Coin Cabinet, Stockholm
74.8	Rasmussen, 10-12 Mar. 1970, 736, 16.39 = Hamburger, 27 May 1929,

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292, 16.37

50

75.9 76.10	Schlessinger 13, 4 Feb. 1935, 1129, 16.7 Schulman, 17–19 May 1938, 1361, 16.92 = Schulman, 8 June 1931, 154, 16.92; Superior Stamp and Coin, 7–8 Dec. 1972, 182; Kleiner 29, 16.61
77.11*	Kress, 8-10 Nov. 1977, 542 = Kress, 29-31 Oct. 1974, 246
YEAR 198	
	M
78.1	Paris 134, 16.70; Hess, 7 Mar. 1935, 384, 15.80; Kress, 26–28 Oct. 1976, 739
	NE .
79.2	Coin Galleries FPL 6, 1964, F80 = Morgenthau 388, 15-16 Mar. 1938, 5; Glendining, 18-20 Apr. 1955, 465, 16.53
	₽
80.3	Berlin (C. R. Fox, 1873), 16.33
80.4	S. W. Grose, McClean 3, 7544, pl. 259, 1, 16.92
	[73]:
81.5*	ВМ
YEAR 199	
	1%
82.1	Cahn 60, 2 July 1928, 757, 16.1
82.2	Paris 135 (ex. Wadd. 598), 16.28 = RGA, pl. 33, 6
82.3	ANS, 15.79
83.4	Berlin (Löbbecke), 16.86
	冯
84.5	ANS photo file, no provenance given, 2, 16.75
85.6 85.7	BM Decis 126 16 80
85.7	Paris 136, 16.80
86.8*	Schlessinger 13, 4 Feb. 1935, 1130, 16.1
YEAR 200	
	K
87.1	BCMBithynia, p. 214, no. 16 (= pl. 39, 3), 15.34
87.2 87.3	Berlin (Dannenberg), 15.78
87.3 88.4	ANS = Pollak 20 Paris 137, $16.47 = RGA$, pl. 33, 7; Schulman Coin & Mint, 18–20 Nov.
50.1	1965, 524, 16.7
88.5	Ball 6, 9 Feb. 1932, 320, 16.1



89.6	Helbing, 8 Nov. 1928, 4029, 17.0
	7 3
90.7	Paris 138 (ex. Wadd. 599), 16.59
91.8	Sotheby's, 24-25 Apr. 1907 (Delbeke), 179, 16.65; SNGvAulock 264,
	13.36
YEAR 201	
	1 %
92.1	Cahn 61, 3-4 Dec. 1928, 134, 16.7; Cahn 68, 26 Nov. 1930, 1435, 16.2;
	Rosenberg 72, 11 July 1932, 559, 16.70; Rosenberg 81, 21 Feb. 1935, 1324
	14
93.2	Schulman, 17-19 May 1938, 1363, 16.05 = Schulman, 5 June 1930, 124,
00.2	16.05; Knobloch FPL 31, Oct. 1967, 195, 16.2
94.3	BM (von Aulock)
94.4	Glendining, 7-8 Nov. 1979, 102
YEAR 202	
	7%
95.1	ANS, 16.64
96.2	Berlin, $16.63 = RGA$, pl. 33, 8
96.3	Stack's, 24-28 Aug. 1976 (ANA), 1570, 15.82
96.4	Schlessinger 13, 4 Feb. 1935, 1131, 16.5
	×
97.5	Kurpfälzische Münz. 9, 11–13 Dec. 1975, 125, 15.184
98.6	Dorotheum 253 (Hollschek Coll.), 23–24 Oct. 1962, 473, 15.7; Hirsch 37,
00.0	10-11 Dec. 1963, 232.
98.7	Glendining, 20 Nov. 1975, 900, 16.22
	M
99.8	Cahn 66, 9 May 1930, 289, 16.41
100.9	Cahn 71, 14 Oct. 1931, 416, 16.25
YEAR 203	
	±
101.1	ANS, $16.74 = Pollak 21$; BM
101.2	RGA, pl. 33, 9
102.3	Peus 250, 15 Mar. 1954, 464, 16.58 = Rosenberg 72, 11 July 1932, 560,
	16.60 = Hess, 6 Jan. 1926 (Löbbecke), 310, 16.6
103.4	Hamburger 96, 25 Oct. 1932, 134, 16.27; Kricheldorf, 7 Oct. 1957, 289, 16.40
	¥
104.5	Superior Stamp and Coin, 17-23 June 1974, 234
	· · · · · · · · · · · · · · · · · · ·

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APPENDIX 1

Just. 38.1.1-10.

Mithridates parricidia nece uxoris auspicatus sororis alterius Laudices filios, cuius virum Ariarathen, regem Cappadociae, per Gordium insidiis occiderat, tollendos statuit, nihil actum morte patris existimans, si adulescentes paternum regnum, cuius ille cupiditate flagrabat, occupassent. Igitur dum in his cogitationibus versatur, interim Nicomedes, rex Bithyniae, vacuam morte regis Cappadociam invadit. Quod cum nuntiatum Mithridati fuisset, per simulationem pietatis auxilia sorori ad expellendum Cappadocia Nicomeden mittit. Sed iam Laudice per pactionem se Nicomedi in matrimonium tradiderat. Quod aegre ferens Mithridates praesidia Nicomedis Cappadocia expellit regnumque sororis filio restituit, egregium prorusus factum, ni subsecuta fraus esset; siquidem interiectis mensibus simulat se Gordium, quo ministro usus in Ariarathe interficiendo fuerat, restituere in patriam velle, sperans, si obsisteret adulescens, causas belli futuras, aut, si permitteret, per eundem filium tolli posse, per quem interfecerat patrem. Quod ubi Ariarathes iunior moliri cognovit, graviter ferens interfectorem patris per avunculum potissimum ab exilio revocari, ingentem exercitum contrahit. Igitur cum in aciem eduxisset Mithridates peditum LXXX milia, equitum X, currus falcatos sexcentos, nec Ariarathi auxiliantibus finitimis regibus minores copiae essent, incertum belli timens consilia ad insidias transfert sollicatatoque iuvene ad conloquium, cum ferrum occultatum inter fascias gereret, scrutatore ab Ariarathe regio more misso, curiosius imum ventrem pertractanti ait: caveret, ne aliud telum inveniret quam quaereret. Atque ita risu protectis insidiis sevocatum ab amicis velut ad secretum sermonem inspectante utroque exercitu interficit; regnum Cappadociae octo annorum filio inposito Ariarathis nomine additoque ei rectore Gordio tradidit.

APPENDIX 2

Possibly Recut Reverse Dies

On coin 42.10 (Plate 5) of B.E. 187 (Z Π P), the numeral Z is higher and wider than the other two numerals, Π and P, and is cut in considerably deeper relief than they are; indeed, the Z is more prominent than any



other letter on the entire reverse. Evidently it was cut over another numeral that the die maker had sought to remove. There is some slight indication of what this may have been. To the right of the diagonal stroke linking the horizontal bars that form the top and the bottom of the Z there appears to be a faint trace of a dot or a third horizontal bar. If that is correct, the original letter would have been an E, so that the reverse die was made originally in order to issue coins in B.E. 185 (year ENP). It is also possible, however, that E was cut mistakenly in place of a Z.

Similarly, on coin 49.4 (Plate 5) of the year B.E. 189 ($\Theta\Pi P$), the numeral, Θ , is both larger and more prominent than the other numerals. The number of the year has been changed, it seems. Furthermore, from the lower left-hand corner of the monogram a vertical bar appears to rise, culminating in a faint dot at the height of the two letters of the monogram. Unfortunately, it is difficult to determine what the original numeral must have been. Adjusting any of the monograms of the previous year to produce the present one would have required more extensive changes than are apparent in the photograph. (But the photo, it must be conceded, is not as clear as might be wished.) The monogram ΩP of this same year could have left the traces that are visible in the picture, but in that case the die cutter would have had no reason to change the year number, too. Perhaps, therefore, an error in the date had to be corrected. Alternatively, the die may have been made for use in an earlier year by a moneyer whose identity cannot be established.

The Θ also appears to have been recut on the die of another coin, 47.1, (Plate 5) of this same year, B.E. 189. In this case the numeral is thicker and more prominent than the others, and on its right side one can make out traces of dots of the sort used at the corners of the other numerals; also, there seems to be a slight trace of another dot to the lower left. Possibly, then, the Θ was cut over an H and the die had been meant originally for striking coins in B.E. 188, (H Π P), when the same moneyer was in office. But one cannot exclude the possibility of a simple error on the die maker's part.

In the monogram AY of coin 59.1 of the year B.E. 192, BPP, several marks may be observed that seem to be traces of lines or characters that were removed from the die. A dot is visible at the upper left side of the



monogram, at the point where a line rising vertically from the lower left corner of the monogram would intersect another horizontal line running parallel to the base of the monogram. Moreover, there seem to be traces of two dots to the right of the monogram, lying on a vertical line parallel to the upright of the Y. The old monogram (if it is correct to interpret these markings as the remains of one) might have been R of the preceding year, B.E. 191 (55.1) or R of B.E. 192 (63.8). In the latter case the coin would again suggest that two moneyers were striking at the same mint. But here, too, it is possible that in manufacturing the die the artisan accidentally cut the wrong monogram, correcting himself subsequently.

THE DATE OF THE AUTONOMOUS TETRADRACHMS OF AEGEAE IN CILICIA

OTTO MØRKHOLM

In an article in Essays Thompson and again, more recently, in this periodical Professor Bloesch has discussed the few known autonomous tetradrachms of the city of Aegeae in Cilicia. He argues that they are contemporary with the tetradrachms of Seleucia Pieria which were struck from 105/4 to 84/3 B.C. He adduces two arguments. In the first place, one of the tetradrachms carries a rather special monogram, that is also found on a bronze issue from the early first century B.C. Second, Bloesch detects a stylistic similarity with the coinage of Seleucia which includes such details as a parallel development of the pendants in the ear of the Tyche on the obverse.

Taken by themselves, these two arguments should be sufficient evidence for the dating proposed by Bloesch. However, two serious objections can be raised. The first, recognized by Bloesch himself,² concerns the legend. While the silver coins have the simple AIΓΕΑΙΩΝ, the contemporary bronze issues show AIΓΕΑΙΩΝ ΤΗΣ ΙΕΡΑΣ ΚΑΙ ΑΥΤΟΝΟΜΟΥ. This is not only awkward, it is simply impossible. As pointed out by Henri Seyrig, whose knowledge of Levantine coins

Ed. note: This article was found among the late Otto Mørkholm's papers. It was written shortly before his death, July 16, 1983.

- ¹ H. Bloesch, "Tetradrachms of Aegeae (Cilicia)," Essays Thompson (1979), pp. 1-7; "Hellenistic Coins of Aegeae (Cilicia)," ANSMN 27 (1982), pp. 78-79.
 - ² Essays Thompson, p. 5.



was unrivaled, the prestige of a city demanded the publicizing of such privileges as soon as they were acquired.³ Sometimes a less important epithet might be dropped for reasons of space on the small bronze issues. However, that the people of Aegeae should have remained silent of the status of their city as "holy" and "autonomous" on their most prestigious coins, the silver tetradrachms, while they at the same time used these epithets on their local bronze issues, is quite inconceivable. The tetradrachms must belong to a period when only the people's name appeared on the coins. According to Bloesch's classification of the bronze issues this means either before 110 or after 47 B.C.

The second objection concerns the weight of the coins. Four specimens are too small a number for statistics, but they all fall within the natural range of the Ptolemaic weight standard of ca. 14.25 g for a tetradrachm (14.24, 13.86, 14.16, 14.24). In the late second and first half of the first century B.C. three different weight standards were current for silver coinage in the Levant.⁴ A reduced Attic standard was used by the Seleucids; in 139/8 B.C. the city of Aradus introduced its own local standard (ca. 15.20 g for tetradrachms) which was adopted by Seleucia Pieria, Laodicea ad mare, and Tripolis when they became autonomous; south of Tripolis the Ptolemaic standard was used by Tyre, Sidon, and Ascalon. This system functioned until 44/3 B.C. At that date Aradus ended its coinage of tetradrachms. Seleucia Pieria and Tripolis had stopped issuing silver long before. The only "survivor," Laodicea, now changed to the Ptolemaic standard.

From this brief survey it appears clear that the use of the Ptolemaic standard at Aegeae during the first decades of the first century B.C. would have been an inexplicable anomaly, isolating its coinage from those of the neighboring cities. After 44/3 B.C. no such anomaly exists and, as we have already seen, the use of the city name alone without any epithets also fits the period after 47 B.C. The considerations of



³ H. Seyrig, "Sur les eras de quelques villes de Syrie...," Syria 27 (1950), p. 7.

⁴ Cf. O. Mørkholm, "The Attic Coin Standard in the Levant during the Hellenistic Period," Studia Paulo Naster Oblata 1 (1982), pp. 144–46, and p. 149, table 5. The three known tetradrachms of Elaeusa, 15.60, 15.51 and 14.14 g (chipped at border), seem to have been struck on the reduced Attic standard used at Antioch under Philip and Tigranes (89–69 B.C.) and are probably to be ascribed to the same period, see p. 144 and p. 148, table 4 B.

legend and weight thus converge to date the coins in the second half of the century. This must mean that the dates on the coins can only be reckoned on the Caesarian era, introduced in Aegeae in 47/6 B.C. The four known coins then belong to the years 44/3, Δ ; 35/4, I Γ ; 32/1, I Γ ; and 30/29 B.C., IH.

In this situation, confronted with two arguments for an early dating and two for a late, the arguments must be balanced against each other. From a methodological point of view the arguments from inscription and weight standard are stronger than the other two and must be regarded as decisive. And how reliable are the two arguments for an early dating? The occurrence of the same monogram might be explained as a conscious imitation. As the two groups of coins must, on my theory, be dated ca. 50-60 years apart, the younger monetary official might be a homonymous grandson of the first who wanted to honor his grandfather by using his rather unusual monogram.

Professor Bloesch's second argument is based on stylistic considerations that are necessarily subjective. And the parallelism between the ear ornaments of the two series from Aegeae and Seleucia Pieria is not so decisive as assumed by Bloesch. At Seleucia the pendant in the form of a bunch of grapes was used from years 6 to 12. In years 4 and 5 a simple ring was used. It appears again, concurrently with the bunch of grapes, in years 10 to 12, but from year 13 onward we find only the ring. Now a simple ring is not the same as the disc-and-hook ornament appearing on the one obverse die from Aegeae used in years 16 and 18. And the chronological relevance of the ear ornament becomes extremely doubtful when the comparison is extended to the issues of Laodicea ad mare. Here the Tyche on the obverse wears a bunch of grapes as pendant from the beginning of the coinage until year 30, i.e. until 52/1 B.C. It is then replaced by a ring which continues until the end of the coinage.⁵ On some obverse dies it even takes a form that seems to be a hook rather than a ring. If this is true, the parallelism on this specific point is stronger between Aegeae and Laodicea than between Aegeae and Seleucia, and the form of the ear ornament actually becomes an additional argument for the late dating.

⁵ For illustrations, see O. Mørkholm, "The Autonomous Tetradrachms of Laodicea ad Mare," ANSMN 28 (1983), pls. 13-19.



It is somewhat surprising that the stylistic comparison between the tetradrachms of Aegeae and of Seleucia Pieria has not led to a discussion of the fundamental difference between the two coinages. From the first issue at Seleucia Pieria (106/5 B.C.) until year 12 (98/7 B.C.) the head of Tyche on all obverses shows a very peculiar profile with a strongly protruding, sometimes slightly curved nose, flat and large cheeks and a determined chin, the relatively fine and small mouth seeming to disappear between the dominant features of nose and chin. This representation is very far from the normal head of Tyche as we know it from other hellenistic coins. As a matter of fact the Tyche of Seleucia gives a distinctly mannish impression or even that of a male person actually disguised as Tyche.

This surprising observation also points to a solution of the problem. The peculiar facial features just enumerated occur in an even more pronounced form on the coin portrait of Antiochus VIII from his last reign, in Antioch, ca. 105–96 B.C. It was this king who received the surname Grypus on account of his beak of a nose. A comparison between his portrait and that of Tyche from Seleucia, line by line, reveals the common conception. I do not intend to argue that Antiochus VIII actually was represented as Tyche. The probable explanation is, in my opinion, that when Seleucia began her production of autonomous tetradrachms she made use of experienced die engravers from the royal mint in nearby Antioch. These, being accustomed to render the royal profile over and over again in a fixed form, more or less automatically transferred the same profile to the Tyche of Seleucia, creating this rather unwomanly likeness.

In contrast, the three heads of Tyche from Aegeae are all within the normal pattern of hellenistic representations of Tyche, a somewhat stiff and formal but decidedly feminine portrait.

The foregoing discussion only allows one conclusion. The autonomous tetradrachms of Aegeae were struck during the second half of the first century B.C. and dated according to the Caesarian era of the city.



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THE MICHIGAN FINDS AT CARTHAGE, 1975–79: AN ANALYSIS

WILLIAM E. METCALF

In 1975, under the joint sponsorship of the American Schools of Oriental Research and UNESCO, a team of excavators directed by Prof. John H. Humphrey of the University of Michigan began investigation of a portion of the site of ancient Carthage. The campaign was part of an international "salvage" effort to recover areas of the site about to be absorbed into what is now Tunis.

The Michigan team was allotted what came to be known as the "ecclesiastical complex," which had its beginning perhaps as early as the fourth century A.D., was occupied, robbed, then reoccupied before the Arab conquest in 698. During the five seasons of excavation there, approximately 7,600 coins or coin-like objects (of which less than half proved attributable) were recovered. The coins were systematically recorded in the interim reports, one of which has yet to appear. It is now possible to form an impression of the aggregate of finds, and to make some general observations about them. It is hoped that presentation in this format will facilitate access to the finds for numismatists as well as archaeologists.¹

¹ The following works are cited in this article.

BMCV W. Wroth, Catalogue of the Coins of the Vandals, Ostrogoths and Lombards, and of the Empires of Thessalonica, Nicaea, and Trebizond, in the British Museum (London, 1911).



CATALOGUE

Because of differences in methods of counting, especially of marginally attributable coins, and because of minor misattributions corrected here (tacitly, for the most part) the figures are not easily compared with those presented in the summary reports 1975 to 1979. Every coin or coin-like object recorded in those reports is accounted for here.

- DOC A. R. Bellinger and P. Grierson, eds., Catalogue of the Byzantine Coins in the Dumbarton Oaks Collection and in the Whittemore Collection, 1, Anastasius I-Maurice, by Alfred Bellinger (Washington, 1966); 2, Phocas-Theodosius II, by Philip Grierson (Washington, 1968).
- LRBC R. A. G. Carson, P. V. Hill, and J. P. C. Kent, Late Roman Bronze Coinage (London, 1960).
- MIB W. Hahn, Moneta Imperii Byzantini 1, 2, 3 = Denkschriften der Oesterreichischen Akademie der Wissenschaften, Philosophisch-historische Klasse 109, 119, 148 (Vienna, 1973, 1975, and 1981).
- Morrisson C. Morrisson, Catalogue des monnaies byzantines de la Bibliothèque Nationale (Paris, 1970).
- RIC H. Mattingly, E. A. Sydenham et al., Roman Imperial Coinage (London, 1923-).
- 1975 T. V. Buttrey, "The Coins," Excavations at Carthage 1975 Conducted by the University of Michigan 1 (Tunis, 1976), pp. 157-197.
- 1976 T. V. Buttrey and R. Bruce Hitchner, "The Coins—1976," Excavations at Carthage 1976 Conducted by the University of Michigan 4 (Ann Arbor, 1978), pp. 99-163.
- 1977 W. E. Metcalf and R. Bruce Hitchner, "The Coins—1977," Excavations at Carthage 1977 Conducted by the University of Michigan 5 (New Delhi, 1981), pp. 185-262.
- 1977a W. E. Metcalf, "The Coins from the Cisterns 1977.1, 1977.2, and 1973.3," Excavations at Carthage 1977 Conducted by the University of Michigan 6 (Ann Arbor, 1981), pp. 79-84.
- 1978 W. E. Metcalf, "The Coins—1978," Excavations at Carthage 1978

 Conducted by the University of Michigan 7 (Ann Arbor, 1982), pp. 63-168.

A manuscript dealing with the 1979 coins has been prepared by the author and will eventually appear in the University of Michigan series. A further report on the 1982 coins (by the author) will appear in *The Circus and a Byzantine Cemetery at Carthage*, ed. J. H. Humphrey (1987); the 1983 coins are being prepared for publication by Dr. Paolo Visonà of the University of Notre Dame.



37 GREEK

- 1. Massalia, 2: female head/caduceus²
- 2. Alexandria, 3: first-second century, dichalkon, 1; Hadrian, dichalkon, 1; Marcus Aurelius, diobol, 1
- 3. Cyrene, 6: Ptolemy VII Ptolemy Apion, 140-96 B.C.
- 4. Carthage, 24: miscellaneous, fourth-second century B.C.
- 5. Uncertain, 2

660 ROMAN

- 6. Republic, Sex. Pompey, as, Syd. 1044, 1
- 7. Tiberius, as, 1
- 8. Drusus Junior, as, 1
- 9. Domitian-Antonius Pius, quadrans, 1
- 10. Hadrian, sestertius, 1
- 11. Antonius Pius, sestertius, 1
- 12. Uncertain first-second century, as, 1
- 13. Second century, dupondius, 1
- 14. Gallienus, antoninianus, Rome, uncertain reverse, 1
- 15. Claudius II, antoniniani, 15: reverse CONSECRATIO altar, 6; CONSECRATIO eagle, 4; FORTVNA REDVX Fortuna I., 1; PAX AVG Pax, 1; uncertain, 3
- 16. Tetricus I, 4: reverse PAX AVG, 2; VIRTVS AVGG, 1; uncertain, 1
- 17. "Barbarous radiates," 29: reverse Pax, 1; Salus, 1; Spes, 2; Virtus, 1; uncertain male, 1; standing figure, 2; altar, 11; uncertain, 10
- 18. Uncertain third century, 5

Maximian, 285-305, 2

19. VOT/XX/FK fraction, Carthage, ca. 303, 2

Constantius 1, 293-306, 1

20. VOT/X/FK fraction, Carthage, ca. 303, 1

Maxentius, 306-12, 2

- 21. CONSERV VRB SVAE nummus, Rome, 307-12, 1
- 22. VOT/QQ/MVL/XX fraction, Rome, ca. 310, 1

Constantine 1, 307-37, 7

- 23. GLORIA PERPET nummus, Rome, 313, 1
- ² The coins in question are 1977.6 and 1978.9, previously described as uncertain Greek. That the female head/caduceus type (compare de la Tour, Atlas de monnaies gauloises [Paris, 1892], pl. 4, 2022, 2051) belongs to Massalia was pointed out to me by Dr. Paolo Visonà.



- 24. SAPIENTIA PRINCIPIS fraction, Rome, 313, 1
- 25. D N CONSTANTINI MAX AVG/VOT X nummus, Rome, 321, 1
- 26. D N CONSTANTINI MAX AVG/VOT XX nummus, Heraclea, 324, 1
- 27. PROVIDENTIAE AVGG nummus, Cyzicus, 325-26, 1
- 28. GLORIA EXERCITVS two standards, uncertain, 330-35, 1
- 29. Illegible, 1

Licinius I, 308-24, 5

30. SOLI INVICTO COMITI nummus, 314-16, 5: Rome, 4; Arelate, 1

Licinius II, 317-24, 1

31 CAESARVM NOSTRORVM/VOT V nummus, Rome, 321, 1

Crispus, 317-26, 1

32. CAESARVM NOSTRORVM/VOT V nummus, Siscia, 320-21, 1

Constantine II, 317-40, 4

- 33. CAESARVM NOSTRORVM/VOT [] nummus, Thessalonica, 320-24, 1
- 34. VIRTVS EXERCIT nummus, Siscia, 320, 1
- 35. GLORIA EXERCITVS two standards nummus, uncertain, 330-35, 1
- 36. VIRTVS AVGVSTI nummus, Rome, 335-41, 1

Fausta, 324-30 (?), 1

37. |IATI VAT AVG/VOT XX in wreath (imitation, 1976.73), 1

Constantius 11, 324-61, 87

- 38. VICTORIAE LAETAE PRINC PERP nummus, uncertain, 320-24, 1
- 39. PROVIDENTIAE CAESS camp gate nummus, 324-30, 2: Trier, 1; uncertain, 1
- 40. GLORIA EXERCITVS two standards nummus, 330-35, 5: Thessalonica, 1; Constantinople, 1; Cyzicus, 1; Antioch, 1; uncertain, 1
- 41. GLORIA EXERCITVS one standard nummus, 335-41, 6: Heraclea, 1; Thessalonica, 2; uncertain, 3
- 42. SECVRITAS REIP nummus, Rome, 337-41, 1
- 43. VOT/XX/MVLT/XXX nummus, 341-46, 8: Cyzicus, 1; Antioch, 3; uncertain, 4
- 44. VICTORIAE DD AVGGQ NN nummus, 341-46, 4: Arelate, 1; Rome, 1; Cyzicus, 1; uncertain, 1
- 45. FEL TEMP REPARATIO falling horseman Æ 3, 351-61, 49: Rome, 4; Aquileia, 2; Siscia, 1; Sirmium, 1; Heraclea, 1; Constantinople, 3; Nicomedia, 1; Cyzicus, 1; Antioch, 2; Alexandria, 1; uncertain, 32
- 46. SPES REIPVBLICE Æ 4, 351-61, 10: Rome, 1; Constantinople, 1; uncertain, 8
- 47. Illegible, 1

VRBS ROMA, 6

48. She-wolf and twins nummus, 330-46, 5: Rome, 1; Nicomedia, 1; Cyzicus, 1; uncertain, 1; barbarous, 1



- 49. VOT/XX/MVLT/XXX nummus, Heraclea or Nicomedia, 341-46, 1 POPVLVS ROMANVS, 2
- 50. Bridge over river nummus, Constantinople, 2

Helena, 337-41, 1

51. PAX PVBLICA nummus, Rome, 1

Constantine I deified, 337-46, 8

- 52. Quadriga nummus, uncertain, 337-46, 5
- 53. VN MR nummus, uncertain, 341-46, 3

Constans, 333-50, 17

- 54. GLORIA EXERCITVS two standards nummus, uncertain, 330-35, 2
- 55. GLORIA EXERCITVS one standard nummus, 335-41, 9: Trier, 1; Rome, 2; Siscia, 1; Nicomedia, 1; uncertain, 4
- 56. VICTORIAE DD AVGGQ NN nummus, 341-46, 4: Rome, 2; uncertain, 2
- 57. SECVRITAS REIP nummus, Rome, 337-41, 1
- 58. VOT/XX/MVLT/XXX nummus, uncertain, 341-46, 1

Theodora, 337-41, 1

59. PIETAS ROMANA nummus, Trier, 337-41, 1

Magnentius, 350-53, 1

60. VICT DD NN AVG ET CAES Æ 2, Rome, 350-52, 1

Decentius, 351-53, 1

61. VICTORIAE DD NN AVG ET CAE Æ 3, Lugdunum, 351-53, 1

Constantius Gallus, 351-54, 4

62. FEL TEMP REPARATIO falling horseman Æ 3, uncertain, 351-54, 4

Julian, 354-63, 8

- 63. FEL TEMP REPARATIO falling horseman Æ 3, 355-60, 4: Cyzicus, 1; uncertain, 3
- 64. SPES REIPVBLICE Æ 4, uncertain, 355-60, 4

House of Constantine, 158

- 65. SOLI INVICTO nummus, uncertain, 312-13, 1
- 66. VIRTVS EXERCIT nummus, uncertain, 319-21, 1
- 67. GLORIA EXERCITVS one standard nummus, 335-41, 9: Arelate, 1; Rome, 1; Heraclea, 1; uncertain, 6
- 68. SECVRITAS REIP nummus, Rome, 337-41, 2
- 69. VICTORIAE DD AVGGQ NN nummus, 341-46, 14: Arelate, 1; Thessalonica, 1; uncertain, 12



- 70. VOT/XX/MVLT/XXX nummus, 341-46, 5: Constantinople, 1; uncertain, 4
- 71. VICT DD NN AVG ET CAE(S) Æ 2, uncertain, 351-53, 1
- 72. FEL TEMP REPARATIO falling horseman Æ 3, 351-61, 87: Cyzicus, 1; Antioch, 2; Alexandria, 1; uncertain, 83
- 73. SPES REIPVBLICE Æ 4, 351-61, 31: Cyzicus, 1; uncertain, 30
- 74. Uncertain Æ 3, 2
- 75. Uncertain Æ 3 or Æ 4, 4
- 76. Uncertain Æ 4, 1

Valentinian I, 364-75, 4

77. SECVRITAS REIPVBLICAE Æ 3, 364-75, 4: Siscia, 2; uncertain, 2

Valens, 364-78, 8

- 78. SECVRITAS REIPVBLICAE Æ 3, 364-78, 3: Lugdunum, 1; uncertain, 2
- 79. GLORIA ROMANORVM Æ 3, 364-78, 4: Aquileia, 2; Heraclea, 1; uncertain, 1
- 80. Illegible, 1

Valentinian 11, 375-92, 12

- 81. VOT/X/MVLT/XX Æ 4, uncertain, 383, 1
- 82. VOT/XX/MVLT/XXX uncertain, 383, 2
- 83. VICTORIA AVGGG Æ 4, 383–87, 3: Rome, 2; uncertain, 1
- 84. GLORIA REIPVBLICE Æ 4, Thessalonica, 383-92, 1
- 85. SALVS REIPVBLICAE Æ 4, 383-92, 4: Nicomedia, 1; uncertain, 3
- 86. Illegible, 1

Theodosius 1, 379-95, 19

- 87. VOT/XV/MVLT/XX Æ 4, uncertain, 379-83, 1
- 88. VOT/X/MVLT/XX Æ 4, uncertain, 383, 4
- 89. VICTORIA AVGGG Æ 4, Rome, 383-87, 1
- 90. SALVS REIPVBLICAE Æ 4, 393-95, 8: Cyzicus, 2; uncertain, 6
- 91. Illegible, 5

Magnus Maximus, 383-88, 2

92. SPES ROMANORVM camp gate Æ 4, uncertain, 387-88, 2

Arcadius, 383-408, 19

- 93. VOT V in wreath Æ 4, Antioch, 383, 1
- 94. VICTORIA AVGG Æ 4, 383-87, 3: Rome, 2; uncertain, 1
- 95. SALVS REIPVBLICE Æ 4, 383-402, 1
- 96. SALVS REIPVBLICAE Æ 4, 383-408, 8: Rome (395-402), 1; Cyzicus (388-92), 1; uncertain, 6
- 97. CONCORDIA AVGGG cross Æ 4, Nicomedia, 395–408, 1
- 98. Uncertain, Æ 4, 5



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Honorius, 393-423, 7
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- 99. SALVS REIPVBLICAE Æ 4, uncertain, 393-408, 1
- 100. VICTORIA AVGG Æ 4, 410-23, 5: Rome, 2; uncertain, 3
- 101. Uncertain, Æ 4, 1

Theodosius 11, 402-50, 12

- 102. Cross in wreath Æ 4, Constantinople, 425-50, 2
- 103. CONCORDIA AVG Æ 4, uncertain, 425-50, 1
- 104. VRBS ROMA FELIX Æ 3, Rome, 402-8, 1
- 105. Monogram in wreath Æ 4, 425-50, 8: Nicomedia, 1; uncertain, 7

Iohannes, 423-25, 1

106. SALVS REIPVBLICE Æ 4, Rome, 423-25, 1

Honoria, 423-49, 1

107. Cross (in wreath?) Æ 4, 423-49, 13

Valentinian III, 425-55, 17

- 108. VOT PVB camp gate Æ 4, Rome, 425-55, 5
- 109. VICTORIA AVGG two Victories Æ 4, Rome, 425-55, 2
- 110. VICTORIA AVGG Victory l. Æ 4, 425-55, 5: Rome, 4; uncertain, 1
- 111. VICTORIA AVG Virtus I. Æ 4, Rome, 425-55, 1
- 112. VICTORIA AVGVS Virtus I. Æ 4, Rome, 425–55, 1
- 113. VOT/XX in wreath Æ 4, Rome, 425-55, 1
- 114. VICTORIA AVGV Virtus I. Æ 4, Rome, 425-55, 1
- 115. Illegible, 1

Marcian, 450-57, 5

116. Monogram, Æ 4, uncertain, 450-57, 5

Leo I, 457-74, 4

- 117. Lion in wreath, Æ 4, Constantinople, 457-74, 1
- 118. Two emperors enthroned, Æ 4, Constantinople, 457-74, 1
- 119. Monogram, Æ 4, uncertain, 457-74, 1
- 120. Uncertain, Constantinople, 457-74, 1

Zeno, 474-91, 1

121. Monogram Æ 4, Constantinople, 474-91, 1



³ This coin, 1978.168, has been discussed in the note to the original entry and in "A Nummus of Honoria and a Decanummium of Constans II from the Excavations at Carthage," NC 141 (1981), pp. 154-56.

Valentinian I - Valentinian III, 168

- 122. GLORIA ROMANORVM Æ 3, uncertain, 364-78, 24
- 123. SECVRITAS REIPVBLICAE Æ 3, uncertain, 364-78, 10
- 124. VIRTVS EXERCITI Æ 3, 395–408, 2: imitation, 1; uncertain, 1
- 125. Uncertain Æ 3, Cyzicus, 1
- 126. Uncertain Æ 3, reverse VOTA, 1
- 127. GLORIA ROMANORVM two emperors Æ 4, uncertain, 408-23, 2
- 128. VICTORIA AVGG two Victories Æ 4, uncertain, 383-88, 1
- 129. VOT/X/MVLT/XX in wreath Æ 4, uncertain, 383, 5
- 130. VOT/XX/MVLT/XXX in wreath Æ 4, uncertain, 383, 5
- 131. CONCORDIA AVGG cross Æ 4, uncertain, 396-408, 4
- 132. SALVS REIPVBLICAE Æ 4, 383–425, 35: Aquileia, 1; Constantinople, 1; Nicomedia, 1; uncertain, 32
- 133. VICTORIA AVGG Victory l. Æ 4, 410-55, 10: Rome, 9; uncertain, 1
- 134. VOT/XV/MVLT/XX in wreath Æ 4, uncertain, 378-83, 5
- 135. VICTORIA AVG(GG) Æ 4, 410-55, 29: Rome, 8; uncertain, 21
- 136. Victory I., legend uncertain Æ 4, 367-455, 16
- 137. VICTORIA AVGGG Æ 4, 383-87, 7: Rome, 2; uncertain, 5
- 138. VICTORIA AVGGG Æ 4, uncertain, 383-92, 1
- 139. Cross in wreath Æ 4, uncertain, 425-55, 9
- 140. Uncertain Æ 4, Rome, 1

944 VANDALS

A. Vandalic kings, all of uncertain mint, 149

Genseric, 428-77, 8

- 141. AR siliqua, BMCV, p. 2, 6-9, 4
- 142. AR half siliqua, 1977.150, 14
- 143. 21 nummi, BMCV, p. 4, 14, 1
- 144. Nummus, 1975.120, 2

Huneric, 477-84, 15

- 145. 42 nummi, BMCV, p. 6, 3, 1
- 146. 4 nummi, BMCV, p. 7, 12-14, 14

Gunthamund, 484-96, 1

147. 4 nummi (?), 1977.157, 1⁵

- ⁴ This piece was originally published as a siliqua but has now been recognized as a half siliqua. See C. Morrisson and J. H. Schwartz, "Vandal Silver Coinage in the Name of Honorius," ANSMN 27 (1982), pp. 149-79. This piece is no. 115 in their catalogue.
- ⁵ The coin is otherwise undocumented. For the attribution see the note to 1977.157.



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Thrasamund, 496-523, 40
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- 148. AR 50 nummi, BMCV, pp. 11-12, 10-14, 1
- 149. Nummus, Victory I., BMCV, p. 21, 33-36, 38
- 150. Nummus, Victory I., T on obverse, 1976.181, 1

Hilderic, 523-30, 61

151. Nummus, BMCV, p. 14, 9, 61

Gelimer, 530-33, 24

152. Nummus, BMCV, p. 16, 4, 24

B. Vandalic period, all nummi of uncertain mint, 795

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153. Victory I., BMCV, p. 17, 1, 12
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- 154. Victory I., BMCV, p. 19, 17, 1
- 155. Victory I., BMCV, p. 20, 21, 9
- 156. Victory I., BMCV, p. 20, 25, 2
- 157. Victory I., BMCV, p. 21, 37, 206
- 158. Victory I., BMCV, p, 22, 42, 1
- 159. Victory I., BMCV, p. 22, 45, 1
- 160. Victory l., style uncertain, 4
- 161. Victory l., to r. cross, 1
- 162. Emperor I., BMCV, p. 25, 56 and var., 3
- 163. Emperor r., BMCV, p. 26, 63, 1
- 164. Palm tree, BMCV, 26, 68, 3024
- 165. Camp gate, BMCV, p. 27, 73, 1
- 166. Camp gate, BMCV, p. 27, 81-82, 7
- 167. D in wreath, BMCV, p. 35, 150 and var., 467
- 168. M in wreath, BMCV, p. 35, 153, 08
- 169. N in border of dots, BMCV, p. 36, 154, 6
- 170. P, BMCV, p. 36, 158, 1
- ⁶ For the attribution, which is traditional but not universally accepted, see MIB 2, p. 72, and the note to 1977.246-323 (p. 247), with further bibliography.
- ⁷ In a recent discussion of the Rabelais-Aïn Merane hoard, this coin, the "rosette" (here no. 171), and cross in wreath (here no. 182) are plausibly assigned to the period 455–80. See C. Brenot and C. Morrisson, "La circulation du bronze en césarienne occidentale a la fin du ve siècle: la trouvaille de Rabelais-Aïn, Merane," *NumAntClas* 12 (1983), pp. 191–211.
- ⁸ Surely this is a "ghost" type. The coin illustrated at BMCV pl. 4, 24, is a badly struck nummus on which only the bottom half of an \mathbb{A} has been preserved; so too, almost certainly, is 1975.154 (non vidi), which is here included under Justinian I, no. 200.



- 171. Eight-pointed star in wreath, BMCV, p. 38, 165, 84°
- 172. Six-pointed star, 1975.150, 2
- 173. Six-pointed star or **X** in wreath, 1978.614, 1
- 174. Six-pointed star in wreath, 1977.421, 5
- 175. Eight-pointed star in double border, 1978.615, 1
- 176. **X** BMCV, p. 37, 159, 1
- 177. \times with pellets in wreath, BMCV, p. 36, 154, 2
- 178. Cross potent in wreath, BMCV, p. 40, 182, 30
- 179. Cross potent in wreath, BMCV, p. 41, 194, 1
- 180. Cross potent in border of dots, 1975.175, 4
- 181. Cross potent, 1979.108, 1
- 182. Cross in wreath, BMCV, p. 41, 197, 3510
- 183. X in wreath, 1978.636, 2
- 184. Uncertain Vandalic, 2211

1454 BYZANTINE

All struck at Carthage unless otherwise specified

Anastasius I, 491-518, 1

185. Follis, DOC 18, Constantinople, 1

Justinian I, 527-65, 807

- 186. AR siliqua, DOC 280, 1
- 187. Dodecanummium, DOC 274, Alexandria, 1
- 188. Decanummium, DOC 304, "Constantine in Numidia," 118
- 189. Decanummium, DOC 316, "Constantine in Numidia," 2
- 190. Pentanummium, DOC 290, 3
- 191. Pentanummium, DOC 300, 5
- 192. Pentanummium, DOC 306, 3
- 193. Pentanummium, 1978.654, 1
- 194. Pentanummium, illegible, 1
- 195. Double nummus, Morrisson 4/Ct/Æ/16, 21
- 196. Nummus, DOC 302, 27
 - 9 See above, n. 7.
 - 10 See above, n. 7.
- ¹¹ The "uncertain Vandalic" rubric embraces nummi whose style, if apparent at all, is neither Roman, Byzantine, nor of a known Vandal variety. Sometimes the types degenerate into simple geometrical patterns.
- ¹² As noted here and in the note to 1976.422. Bellinger's attribution of a coinage to Constantine in Numidia has not been accepted by subsequent scholars. The attribution is retained here in quotes as a simple expedient for distinguishing this coinage, which seems to belong to Carthage, from the "mainstream" issues of the mint.



- 197. Nummus, BMCV, p. 25, 20, 30
- 198. Nummus, DOC 302 or 303, 46
- 199. Nummus, DOC 308, 5
- 200. Nummus, DOC 309, 207
- 201. Nummus, reverse A, obverse PAX, 2
- 202. Nummus, reverse A, obverse cross, 1
- 203. Nummus, reverse A with pellets, 1976.355, 1
- 204. Nummus, DOC 310.1, 2713
- 205. Nummus, DOC 310.2, 49
- 206. Nummus, DOC 310.1 or 310.2, 10
- 207. Nummus, DOC 309 or 310, 5
- 208. Nummus, DOC 311, 85
- 209. Nummus, 1976.315, 1
- 210. Nummus, DOC 373, 1
- 211. Nummus, DOC 374, 114
- 212. Nummus, 1975.218, 12014
- 213. Nummus, 1975.218 var., 4
- 214. Nummus, 1975.218 var. with bust l., 1
- 215. Nummus, 1975.218 var. with bust facing, 1
- 216. Nummus, 1977.645, 10
- 217. Nummus, 1977.651, 11
- 218. Nummus, uncertain, 10

Justin 11, 565-78, 24

- 219. Follis, DOC 202, 1
- 220. Half follis, DOC 66, Thessalonica, 1
- 221. Half follis, DOC 203, 2
- 222. Decanummium, DOC 192, 1
- 223. Decanummium, DOC 195, 6
- 224. Decanummium, DOC 200, 6
- 225. Pentanummium, DOC 194, 1
- 226. Pentanummium, *DOC* 197, 2
- 227. Pentanummium, Morrisson 5/Ct/Æ/05, 3
- 228. Pentanummium, Morrisson 5/Ct/Æ/14, 1

Tiberius II or Maurice, 1

229. Decanummium, Constantinople, 1

- ¹³ See Buttrey's note to 1975.206-11 (p. 192) for a refinement of the standard obverse description.
- ¹⁴ The original attribution of 212–15 at 1975.218 (p. 193), which seems to be confirmed by 1976.405, is followed, although the number of variants has grown with succeeding seasons. See also the note to 1977.645–50 (p. 248). The MIB Nachträge take no account of the discussions of the coin.



Maurice Tiberius, 582-602, 93

- 230. Half follis, DOC 46-63, Constantinople, 1
- 231. Half follis, DOC 56-57, Constantinople, 2
- 232. Half follis, DOC 244, 1
- 233. Half follis, DOC 249, 4
- 234. Half follis, DOC 261, 7
- 235. Decanummium, DOC 245, 3
- 236. Decanummium, DOC 245 var., 1
- 237. Decanummium, DOC 250, 2
- 238. Decanummium, DOC 253, 3
- 239. Decanummium, DOC 255, 9
- 240. Decanummium, DOC 262, "Constantine in Numidia," 5
- 241. Decanummium, uncertain, 1
- 242. Pentanummium, DOC 246, 3
- 243. Pentanummium, DOC 251, 4
- 244. Pentanummium, DOC 254, 10
- 245. Pentanummium, DOC 256, 2
- 246. Pentanummium, DOC 263, "Constantine in Numidia," 22
- 247. Pentanummium, uncertain, 2
- 248. Double nummus, DOC 247, 3
- 249. Nummus, Morrisson 7/Ct/Æ/36, 8

Phocas, 602-10, 61

- 250. AR 200 nummi (?), DOC 112, 1
- 251. Half follis, DOC 113, 2
- 252. Half follis, DOC 116, 17
- 253. Dodecanummium, DOC 106, Alexandria, 1
- 254. Decanummium, DOC 114, 6
- 255. Decanummium, DOC 117 and var., 8
- 256. Pentanummium, DOC 118, 16
- 257. Pentanummium, Morrisson 8/Ct/Æ/09, 9
- 258. Pentanummium, uncertain, 1

Revolt of Heraclius, 608-10, 27

- 259. Decanummium, DOC 8, 2
- 260. Pentanummium, DOC 9, 10
- 261. Pentanummium, Morrisson 9/Ct/Æ/07, 1
- 262. Double nummus, Morrisson 9/Ct/Æ/08, 14

Phocas-Heraclius, 602-41, 15

- 263. Half follis, 5
- 264. Decanummium, 4
- 265. Pentanummium, 6



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Revolt, 608-10, or Reign, 610-41, of Heraclius, 3
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266. Pentanummium, 3

Heraclius, 610-41, 154

- 267. AR DOC 233, 12
- 268. Half follis, DOC 234, 34
- 269. Half follis, DOC 235, 24
- 270. Half follis, DOC 234 or 235, 6
- 271. Half follis, Morrisson 10/Ct/Æ/01, 2
- 272. Decanummium, DOC 236, 39
- 273. Decanummium, DOC 236 var., 2
- 274. Decanummium, DOC 237, 5
- 275. Decanummium, DOC 238, 8
- 276. Decanummium, DOC 238 var., 1
- 277. Decanummium, DOC 236-38, 1
- 278. Decanummium, DOC 251-59, Catania, 1
- 279. Hexanummium, DOC 198, 1
- 280. Pentanummium, Morrisson 10/Ct/Æ/21, 17
- 281. Pentanummium, DOC 239, 1

Constans 11, 614-68, 224

- 282. AR DOC 131, 3
- 283. AR DOC 132, 3
- 284. Follis, DOC 69-74, Constantinople, 1
- 285. Follis, DOC 82d, Constantinople, 1
- 286. Follis, DOC 147, 12
- 287. Half follis, DOC 138, 37
- 288. Half follis, DOC 139, 4
- 289. Half follis, DOC 138 or 139, 3
- 290. Half follis, DOC 140, 9
- 291. Half follis, DOC 138-40, 1
- 292. Half follis, DOC 135 or 138-40, 1
- 293. Half follis, DOC 140 var., 2
- 294. Half follis, DOC 144, large, 5716
- 295. Half follis, DOC 144, small, 7
- 296. Half follis, DOC 145/4, large, 1
- 297. Half follis, DOC 145/4, small, 3
- 298. Half follis, DOC 145, small, 18
- 299. Half follis, DOC 145, 14
- 300. Half follis, DOC 146, large, 1



¹⁶ For an analysis of these half folles of Constans, 294-301, see Buttrey's note to 1976.521-64 (p. 152), conveniently capsulized there on p. 153.

- 301. Half follis, *DOC* 144-46, 6 302. Half follis, *DOC* 148, 20
- 303. Decanummium, DOC 105, Syracuse, 1
- 304. Decanummium, DOC 136, 116
- 305. Decanummium, DOC 141, 9
- 306. Decanummium, DOC 141 var., 1
- 307. Decanummium, DOC 142, 6
- 308. Decanummium, DOC 142 var., 1
- 309. Decanummium, DOC 149, 1

Constantine IV, 668-85, 17

- 310. AR DOC 50, 2
- 311. Follis, DOC 51, 6
- 312. Follis, DOC 61, Syracuse, 1
- 313. Half follis, DOC 37, Constantinople, 5
- 314. Half follis, DOC 53, 3

Justinian II, First Reign, 685-95, 14

- 315. Follis, DOC 29, 1
- 316. Follis, DOC 30, 2
- 317. Follis, DOC 31, 2
- 318. Follis, DOC 32, 3
- 319. Follis, DOC 33, 2
- 320. Follis, DOC 33 var., 1
- 321. Follis, DOC 30-33, 1
- 322. Follis, Morrisson 15/Ct/Æ/03, 2
- 322. Uncertain Byzantine, 13

Miscellaneous, 29

- 324. Greek, Roman, or Byzantine, 8
- 325. Modern coins, 917
- 326. Seals, 5
- 327. Weights, 5
- 328. Signet?, 1
- 329. Pendant, 1
- ¹⁶ See 1978.1240 and the note (p. 152) as well as W. E. Metcalf, "A Nummus of Honoria and a Decanummium of Constans II from the Excavations at Carthage," NC 141 (1981), pp. 155-56.
- ¹⁷ With the exception of 1977.818, a copper of Mehmet IV (A. H. 1058-99 = A.D. 1648-87), all the modern coins are nineteenth and twentieth century.



GREEK

The Greek coins are few and "residual," in the sense that they undoubtedly represent an early phase of currency at Carthage; but the possibility that they were actually in use during the late Roman or Vandalic period cannot be ruled out.¹⁸

ROMAN

The Roman finds are far more numerous and are noteworthy for the virtual absence of coins earlier than the 270s A.D. The small number of coins from the mint of Carthage itself should cause no surprise, since nummi (or "folles") comprised the bulk of its output and these coins, as a class, are not noted at the site; otherwise the profile of coins for the fourth century is familiar, with a heavy bias in favor of the extremely common FEL TEMP REPARATIO Æ 3 and SPES REIPVBLICE Æ 4. The distribution by mints indicated in Table 1 is more or less typical of western European sites.¹⁹

- "A long list could be compiled of examples of ancient coins, whether countermarked or not, that circulated in later periods or otherwise out of context as a result of carestia monetae, or simply because they corresponded roughly to a current denomination." For a fascinating study of this phenomenon, see C. Morrisson, "The Re-Use of Obsolete Coins: The Case of Roman Imperial Bronzes Revived in the Late Fifth Century," in C. N. L. Brooke et al., eds., Studies in Numismatic Method Presented to Philip Grierson (Cambridge, 1983), pp. 95–111, esp. pp. 103–4, nn. 5–6; the quotation is from p. 97.
- ¹⁰ See for example L. Houghtalin, "Roman Coins from the River Liri, III," NC 145 (1985), p. 80, for a table of mint distribution of coins struck A.D. 295–395 and recovered at that site from 1974–81; comparable tables are provided with the earlier reports cited there, p. 67, n. 3. For a much larger site, see the important chapters on "circulation monétaire" in I. Pereira, J.-P. Bost, and J. Hiernard, Fouilles de Conimbriga III. Les monnaies (Paris, 1974), pp.193–308, esp. pp. 245 ff.



TABLE 1: MINT DISTRIBUTION

Mint	294–337	<i>337–364</i>	364–491
London	0		_
Ambianum	_	0	
Trier	2	1	0
Lugdunum	0	1	1
Arelate	2	2	0
Rome	14	12	46
Ostia	0		
Carthage	3		
Aquileia	0	9	3
Siscia	3	1	2
Sirmium	0	1	0
Thessalonica	4	1	1
Heraclea	3	0	1
Constantinople	1	6	7
Nicomedia	2	1	4
Cyzicus	3	7	4
Antioch	1	9	1
Alexandria	0	2	0
Uncertain	21	166	204
Imitative	1	0	1

0 = no coins found; — = mint inactive

VANDAL AND VANDALIC

Early reports in the series illustrate the difficulty of dealing with the Vandal and Vandalic material, which for the fifth century and beyond has proved intractable. The standard reference remains Wroth's BMCV, supplemented by occasional find reports of varying accuracy and precision. Even Hahn's monumental MIB, which has so advanced our understanding of the early Byzantine coinage, treats the Vandals cursorily and the Justinianic coinage for the most part conventionally; yet it is precisely here, in the hiatus between the isolation from Roman currency and the introduction of Byzantine, that problems abound.

Wroth's approach was, at root, to attribute to the Vandals virtually everything that lacked a Roman flavor and which did not identify itself as Justinianic. The signed or "regnal" coins of the Vandal kings present no problem. The utility of his work diminishes, however, the more



closely issues of poor style approach in type those of Valentinian III or Justinian I, and it is here that hoard and excavation evidence provides the only ground for secure attribution. His work nonetheless remains the most comprehensive and most accessible survey of the period, and in the reports it has been used as a framework for this transitional coinage except where subsequent scholarship has demanded subtraction through reattribution to Roman or Byzantine domination.²⁰

The following types (not including imperial monograms, which may be official issues) ascribed by Wroth to the Vandals were not found at all at Carthage:

Roma seated (BMCV, p. 23, 49-50).

Pax (BMCV, p. 23, 51).

Lion, looking back (*BMCV*, p, 26, 65–66) or standing r. (*BMCV*, p. 26, 67).

Temple (BMCV, p. 28, 84). Today this would certainly be read as a "barbarous radiate" of the third century.

▲ (BMCV, p. 35, 149).

K (BMCV, p. 35, 152).

M (BMCV, p. 35, 153). Although I have not seen the specimen noted above in the catalogue, no. 168, the one illustrated in BMCV, pl. 4, 24, is surely a standard nummus of Justinian I, type of DOC 309.

N and variant (BMCV, p. 36, 154-56). The piece illustrated in BMCV, pl. 4, 25, might well belong to the series first attributed to Justinian I in 1977.651 (here no. 217).

T in wreath (BMCV, p. 36, 157).

Pentagram (BMCV, p. 42, 202-4).

It seems safe to remove these from any future corpus of Vandalic coins, as in fact Hahn has done implicitly in MIB.

wroth's struggle with the problems of attribution is best reflected in his remarks in "On the Study of Byzantine Numismatics," in J. Evans et al., eds., Corolla Numismatica: Numismatic Essays in Honour of Barclay V. Head (Oxford, 1906), pp. 325-35, esp. p. 329; and BMCV, p. xx, where, with reference to our "Vandalic" series, he states, "for convenience of reference, and because of the present uncertainty of the attributions, it has seemed best to catalogue this whole series of small coins (pp. 17 ff. infra), rather mechanically."



BYZANTINE

The Byzantine coins, not unexpectedly, provide the most complete picture to date of the city's mint after its return to Byzantine control. Only one certain²¹ and one probable²² hoard were found, both consisting principally of nummi. In both a major component was the heretofore unknown cross potent with pellets nummus (1975.218), which, following the initial report, we continue to ascribe to Justinian.²³ It is worth noting that the admixture of Vandal and official nummi, observed in other hoards, is confirmed here.

The nummus was the characteristic Vandal and Vandalic denomination, but the beginning of the Byzantine coinage is elsewhere rightly dated from the introduction of a new unit, the follis, which replaced the nummus as the largest copper denomination and which, with its fractions, dominated subsequent petty currency.

The coins which went from hand to hand must have been primarily these folles, at least at those mints where this denomination was produced. This is a fair inference from the reports of Antioch and Athens, and at Sardis the denomination is at least as well represented as the next most common, the decanummium and the pentanummium. The characteristics of a site are, of course, dictated by the supply of coin available, and this in turn depends upon such concrete factors as the proximity of mints as well as more imponderable ones such as trade connections (which can hardly ever be quantified on the basis of copper currency alone). In this respect Carthage, too, was typical: virtually all the Byzantine coinage came from the city's own mint. This is hardly surprising given the distance of the Anatolian ones and the sparseness of coinage at the Italian mints. Even so, the picture was already perceived as remarkable in 1976, only the second season of excavation, when Buttrey observed that nummi were present in numbers all out of proportion to their expected occurrence.

That smaller coins are the easier to lose does not seem an adequate explanation when pieces of larger module struck by other

²¹ See *1978*, pp. 64–67.

²² See 1977a, pp. 81-82.

²³ See 1975.218, p. 193; 1976.405, p. 151, n.; 1978, pp. 66-67.

emperors are commonly found in our site. If we calculate an imaginary coin which is the average of all the bronze of each reign struck at Carthage and found in 1976, the results are these:

Ruler	Weight	Diameter	Largest Denomination in Finds
Justinian	.56	9.04	E
Justin II	2.14	15.67	l
Maurice	3.73	16.86	K
Phocas	4.33	16.61	K
Heraclius	3.31	16.29	K
Constans II	4.04	18.57	M
Constantine IV	4.08	19.67	M
Justinian II	4.24	20.80	M

The find coins of Justinian I, almost all nummi, were the more likely to escape the notice of the excavators, and it is encouraging that so many have been discovered. But where then are his larger denominations, which ought the more easily to have been found? They cannot have been particularly uncommon in their day; DO[C] alone has 25 specimens of the follis. The table shows that it was easy enough to lose multiples struck in subsequent reigns.

Whatever the reason for this gap, it is clear that module alone is not a sufficient explanation. If we look to the value of the coins, these data may serve to provide an Index of Tolerable Loss. That is, there is an ever greater likelihood that a coin will be lost, not only a) as its module is smaller and the coin less easily visible, but b) as its value declines so that one takes less account of it.²⁴

Buttrey went on to note the steadily rising value and size of the coins with time, and concluded, "Since the larger coins would have been the easier to rediscover, it must have been the case that the loss was less seriously felt." In confirmation he noted the deletion from the system of smaller denominations, inferring that "the most likely explanation is a steady rise in prices which rendered the smaller denominations less



³⁴ 1976, p. 102.

and less useful, and the larger pieces proportionately less valuable—thus the more frequent loss of larger pieces in the second half of the seventh century." To dramatize the difference between Carthage and other sites, he constructed a table which compared the Carthage finds with those of Apollonia and Sardis. Folles from as early as Justinian I appear at those two sites, whereas at Carthage the earliest folles are of Constans II.

The picture as described by Buttrey is accurate but to some extent misleading. Among the mints to which he compared the profile of the Carthage finds, only Antioch was itself a mint city, and even there the smallest denomination struck was the pentanummium: Athens, Corinth, Sardis, and Apollonia all depended upon coin imported during the course of trade or tourism, or by consignment, for their petty currency. Any of these means would have encouraged the transfer of larger rather than smaller denominations. It was in part the sheer inconvenience of transacting business in nummi that led to the creation of the follis by Anastasius I, and it would be surprising if the circulation of this denomination were not encouraged by its use in transactions of state. This would merely have reinforced its greater convenience.

The point is, nonetheless, valid, and in studying the finds for 1977, which were more than equal to those of 1975 and 1976 in their aggre-

²⁶ P. J. Casey, Understanding Ancient Coins: An Introduction for Archaeologists and Historians (London, 1986), pp. 69–74, sees coin losses as proportional to 1) volume originally issued, 2) intrinsic value of the coins as issued, 3) prevailing political factors, 4) prevailing economic factors, and 5) physical size of coins in the original population. To 5 a caveat is appended: "Although it is generally true that large coins are more easily recovered when lost than small coins, the changing value of large coins over the lifespan of a currency system may, despite their bulk, so reduce their monetary value as to make the hot pursuit of the individual large sized lost coin hardly worth the trouble." He acknowledges the interplay of all factors in determining coin losses at a site.

To apply these factors to Carthage, 1) is unknowable, except as it may be inferred from the finds themselves; 2) and 5) are already taken into account by Buttrey, and 3) and 4) are taken by Buttrey and myself to be more or less constant. He would see 4) as an inflationary evironment; I would see prices rising but not in real terms.

What Buttrey has called "Index of Tolerable Loss" is called by Casey (pp. 70-71) "the search for factor": "In a coin population of mixed denominations it is the lowest value coins which people can best afford to lose and on which they will expend the least effort of recovery."



gate, it occurred to me that there were other ways of measuring the "Index of Tolerable Loss" with more precision (if precision is the right term in this context) and of extending its implications. For while Buttrey had been correct to note the phenomenon, the estimate that it merely reflected rising prices was in itself meaningless without any documentation for what those prices were. Here the Carthage coins provided a wealth of material where two factors which are usually uncontrolled variables were not so in fact: the weight of the theoretical nummus and the mean value in nummi of the coins recovered.

The mean value can easily be determined by taking the total value of each ruler's coins, expressed in nummi, and dividing it by the total number of the ruler's coins recovered, as in Tables 2 and 3. In both tables, silver coins have been eliminated and coins of approximate attribution have been included with those of the appropriate chronological period so that coins designated "Phocas-Heraclius," "Revolt or Reign of Heraclius," etc., have been included with Heraclius.

Table 2: Mean Values, 1975–77 Finds

Ruler	Value	Coins	Mean Value
Justinian: all coins	446 N	386	1.16 N
Justinian: large denominations	75 N	15	5.00 N
Justin II	95 N	10	9.50 N
Maurice	424 N	45	9.42 N
Phocas	407 N	36	11.31 N
Heraclius	1311 N	94	13.95 N
Constans II	3300 N	159	20.75 N
Constantine IV	260 N	9	28.89 N
Justinian II	320 N	8	40.00 N

The broad picture suggested by these figures was borne out by finds in the subsequent seasons.

Table 3: Mean Values, 1975-79 Finds

Ruler	Value	Coins	Mean Value
Justinian: all coins	932 N	806	1.16 N
Justinian: large denominations	164 N	38	4.32 N
Justin II	225 N	24	9.38 N
Maurice	779 N	94	8.29 N



Phocas	662 N	60	11.03 N
Heraclius	2104 N	172	12.23 N
Constans II	4440 N	218	20.37 N
Constantine IV	440 N	15	29.33 N
Justinian II	560 N	14	40.00 N

The beginning and ending figures are similar (although the last one is slightly artificial, since Justinian II is not known to have struck any denomination smaller than the follis), and the figures for intervening reigns are comfortably close to one another.

The weight of the theoretical nummus is easier to calculate: one simply divides the total weight of all coins found for a given ruler by the number of coins they represent.

TABLE 4: WEIGHT OF THEORETICAL NUMBUS IN GRAMS

Ruler	Total Weight	Total Value	Theoretical Nummus
Justinian	209.95	446 N	.47
Justin II	29.18	95 N	.31
Maurice	149.62	424 N	.35
Phocas	140.44	407 N	.35
Heraclius	307.19	1311 N	.23
Constans II	622.29	3300 N	.19
Constantine IV	33.64	260 N	.13
Justinian II*	22.98	280 N	.08

^{*} One fragmentary piece of Justinean II has been eliminated.

The figures above are based on finds from 1975-77 only, but once again they are confirmed by the totality of the 1975-79 finds, which give figures for the theoretical nummus as follows: Justinian I, .47 g; Justin II, .34 g; Maurice Tiberius, .35 g; Phocas, .33 g; Heraclius, .23 g; Constans II, .19 g; Constantine IV, .13 g; and Justinian II, .08 g.

The only methodological objection to the use of these figures is that they come from excavation coins, where caution always has to be employed in the analysis of weights (since excavation coins suffer from wear, overcleaning, and often are damaged, their weights do not necessarily correlate with the weight of the coins as struck). But in fact the construction of frequency tables which would exclude the Carthage finds is impossible, since the body of material otherwise preserved is so small; and if one works only from mean weights, the results compare



favorably with coins preserved at Dumbarton Oaks, the Bibliothèque Nationale, and the ANS, which may be presumed to have been selected, at least in part, for their state of preservation.

Using the average denomination as a base and combining it with the weight of the theoretical nummus derived above, it is then possible to establish the stability of prices, as expressed in terms of copper, over the entire period covered by the site. By taking the reign of Justinian I as a base, one can construct an index of relative values based on the average denomination lost; to make comparison possible it is necessary to use the "other" figures for Justinian (i. e. exclude the nummi) since the nummus was struck only in minute quantities after his day. The equation is then

This index can then be multiplied by the theoretical number of nummi per pound to establish a price per pound in Justinianic terms.

TABLE 5: CARTHAGE, 1975-77

Ruler	Index	N/lb.	Price/lb.
Justinian I	1.00	697	697
Justin II	1.90	1056	556
Maurice Tiberius	1.88	936	498
Phocas	2.26	936	414
Heraclius	2.79	1424	510
Constans II	4.17	1723	413
Constantine IV	5.78	2519	436
Justinian II	8.00	4093	512

TABLE 6: CARTHAGE, 1975-79

Ruler	Index	N/lb.	Price/lb.
Justinian I	1.00	697	697
Justin II	2.17	963	444
Maurice Tiberius	1.92	936	487
Phocas	2.55	992	389
Heraclius	2.83	1424	503
Constans II	4.71	1723	366
Constantine IV	6.93	2519	363
Justinian II	9.26	4093	442



Obviously no great measure of precision can be claimed for these computations, for the only figure that can actually be calculated is the weight of the theoretical nummus; and even this figure is more precise than it is accurate, since the sample is small and distorted by wear, damage, cleaning, and the usual vicissitudes associated with excavation coins. Moreover, it is not clear whether the method can be applied to other sites. It would seem to demand a situation in which the smallest unit of account was also a coin, so that there is a direct relationship between money of account and circulating coin; only thus can the distorting economic effect of barter or upward cumulation of transactions be eliminated. And not only must the smallest coin be available, but available in abundance: Antioch, for example, in other respects comparable to Carthage, is not in fact so because it struck no unit smaller than the pentanummium and does not seem to have been receptive to the nummus.²⁶

Carthage is, moreover, a special case. Its history during the Vandal and the Byzantine periods isolates it almost completely from the later Roman economy, and the numismatic facts at Justinian's retaking of the Vandal capital dictated that it would remain outside the mainstream of his imperial currency, as indeed it did until the Arab conquest virtually sealed the site from a numismatic point of view. Thus it is self-contained for the purposes of this discussion, and its parochialism in coinage makes it an ideal model but not necessarily one that can be generalized.

Even with all these limitations, the fairly self-consistent picture presented here represents an advance over attempts to gauge economic activity at a site based on raw numbers of coins found (which are vitiated in part by an imperfect appreciation of the relative output of mints represented) or average number of coins lost per reign, which leave so many variables as to make the evidence virtually useless to the historian.²⁷



²⁶ Only five nummi—four Vandal and one Byzantine—are recorded from Antioch: D. B. Waage, Antioch-on-the-Orontes 4, pt. 2: Greek, Roman, Byzantine and Crusaders' Coins (Princeton, 1952), nos. 2054 57.

²⁷ At the very least this analysis points to the long-term stability in the price of copper at Carthage: see 1977, pp. 187-89, and S. Ellis, "Carthage in the Seventh Century an Expanding Population?" CEA 17 (1985), p. 38.

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SOME ADDITIONAL ROMAN REPUBLICAN OVERSTRIKES

(PLATES 7-8)

CHARLES A. HERSH

In my first article on Roman Republican overstrikes published many years ago,¹ it was pointed out that many of the earlier authors who had published such coins had failed to recognize correctly and understand these overstrikes.² In that article, materials from my collection and from major European public and private collections were presented as well as corrections of previously published coins. Since then, Michael Crawford has brought new material to light as part of his detailed study of Roman Republican coinage and in his recent book on Rome and its influence on the Italian and Greek coinages in the Mediterranean basin during the Republic.³ Both of us have pointed out errors made in these earlier studies and have omitted obviously misattributed references.

- ¹ C. A. Hersh, "Overstrikes as Evidence for the History of Roman Republican Coinage," NC 1953, pp. 33-68, hereafter, Hersh.
- ² Baron P.-P. D'Ailly, Recherches sur la monnaie Romaine (Paris, 1864-69); R. Garrucci, Le monete dell'Italia antica (Rome, 1885); M. von Bahrfeldt, "Überprägte Münzen aus der Zeit der Romischen Republik," ZfN 19 (1895), pp. 72-90; E. J. Haeberlin, Aes Grave (Frankfurt-am-Main, 1910), esp. pp. 107-16 and 126-33; P. Bonazzi, "Le prime monete Romane de bronzo coniate in Sicilia," RIN 35 (1922), pp. 5-26; E. Gabrici, "La Reconiazione del bronzo studiate in rapporto con la riduzione dell'asse nell' Italia e nelle Sicilia," Bolletino di Circolo Numismatico Napoletano 32 (1947), pp. 29-52.
- ³ M. H. Crawford, Roman Republican Coinage (Cambridge, 1974), pp. 105-17, hereafter, Crawford; Coinage and Money under the Roman Republic (London, 1985), pp. 336-37, herafter, CMRR.



There is additional material available to supplement and illustrate some of the information given in Crawford's two books as well as new and important overstrikes that have not yet been published. In this article, where new pieces are published, appropriate references to Crawford and CMRR are given following the weight and provenance of each piece.

TWO IMPORTANT SECOND PUNIC WAR SILVER OVERSTRIKES

In March 1976, Leandre Villaronga published a most vital silver overstrike in the periodical of the Asociacion Numismatica Española, which unfortunately has a rather limited circulation outside Spain. The coin was a Carthaginian half-shekel, either struck at Carthage for circulation in Sicily or in Sicily itself by the Carthaginians, overstruck on an early Roman denarius. The overstriking types were:

*1a. Obv. Laureate bearded male head l.

Rev. African elephant r.; below, punic letter A.

3.03 g, *CMRR*, p. 336, E a (a).

The Carthaginian types were overstruck on a normal early Roman denarius:

*1b. Obv. Helmeted head of Roma r.; behind, X.

Rev. Dioscuri riding r.; below, ROMA.

Crawford 44/5, Syd. 140

The X, which is the value mark of the denarius undertype, is clearly seen directly in front of the lips of the male head on the obverse of the Carthaginian overtype, as are traces of Roma's helmet, which are visible in front of the nose of the male head. Villaronga also states that

- ⁴ L. Villaronga, "Reacuñacion Carthaginesa sobre un denario Romano," *Gaceta Numismatica* 40 (May, 1976), p. 15.
- ⁵ A. Burnett, "The Enna Hoard and the Silver Coinage of the Syracusan Democracy," SNR 62 (1983), p. 12.
 - ⁶ CMRR, p. 336, E. Carthage, a.



there are traces of the locks of Roma's hair visible on the cheeks of the male head, while behind his head there appear to be vestiges of Roma's mouth and nose. No traces of the reverse undertype of the denarius are to be found under the Carthaginian reverse.

Villaronga is virtually certain that this overstrike came from the Enna Hoard (*IGCH* 2232), which was found in Sicily in 1966 and contained at least sixteen of these half-shekels. Burnett dates the burial of the hoard to 211 B.C.⁷ Buttrey had earlier stressed that, as the Carthaginians were forced to withdraw from Sicily in 210 B.C., the overstrike could not have been made any later than that year, which provides a certain terminus ante quem for the introduction of the denarius, a terminus that is consonant with his evidence from Morgantina.⁸

The only real problem produced by this overstrike is that the coin's weight is only 3.03 g, which is at least a full gram too light for an early denarius. The missing piece of the flan, presumably caused by the restriking, and the two places on the edge of the coin that appear to have lost some metal could hardly account for so substantial a loss of weight.

In 1975, when Patrick Marchetti published a book that presented his views concerning the economic history of the Second Punic War, perhaps the most interesting thing about the volume, numismatically speaking, was the greatly enlarged photograph of a coin on its dust jacket that the author stated was a Punic silver coin overstruck on an early Roman victoriatus. Unfortunately, the undertypes were not at all evident, although some traces of overstriking were discernible. Efforts to elicit further information from Marchetti were fruitless.

Fortunately, late in 1984 I was offered for purchase an overstruck silver coin, which turned out to be a very clear specimen of the same Siculo-Punic half-shekel struck on a Roman silver victoriatus that had been illustrated by Marchetti. The overstriking types were:

- *2a. Obv. Head of male (Triptolemus?) r., wreathed with wheat ears; dotted border.
- ⁷ Burnett (above, n. 5), p. 12.
- ⁸ T. V. Buttrey, "Morgantina and the Denarius," NumAntClas 8 (1979), p. 156.
- P. Marchetti, Histoire économique et monétaire de la deuxième guerre punique (Brussels, 1975).



- Rev. Prancing or galloping horse r.; below, Punic letter H; wreathed border.
- 2.70 g, Hersh Collection. CMRR, p. 336. E, e (a).

Burnett¹⁰ had assigned these coins to the mint of Acragas (Agrigentum) with some certainty, which was followed by Walker.¹¹

The Siculo-Punic coin was overstruck on an normal early Roman victoriatus:

- *2b. Obv. Laureate head of Jupiter r.; dotted border.
 - Rev. Victory standing r., crowning trophy; in exergue, ROMA; line border.

Crawford 44/1, Syd. 83.

The overstriking here is very clear: near the chin of Triptolemus on the overstriking Punic obverse can be seen the beard and neck truncation of Jupiter from the undertype, while by the nose of Triptolemus are traces of Jupiter's lips. On the reverse, the exergual line and **ROM** of the undertype's inscription are visible, as is the top of Victory's right wing.

As with the previously described overstrike on a denarius, the terminus ante quem is 210 B.C., when the Carthaginians decamped from Sicily. This terminus is also in accordance with the dating of the inception of the Roman victoriatus to shortly after 215 B.C. The weight of the coin is certainly consistent with that of an early victoriatus.

FIRST CENTURY ROMAN REPUBLICAN SILVER OVERSTRIKES

Roman Republican silver overstrikes are extremely rare, as mint officials at Rome apparently were very careful in the preparation of the flans for its silver coinage. Overall, only a dozen or so denarius over-



¹⁰ Burnett (above, n. 5), p. 13.

¹¹ A. S. Walker, "Some Hoards from Sicily and a Carthaginian Issue of the Second Punic War," Studies in Honor of Leo Mildenberg (Wetteren, Belgium, 1984), p. 272.

strikes have been published, including the following denarius, Hersh 73, which appeared without illustration:

- *3a. M. Plaetorius Cestianus.
 - Obv. Male head r., with flowing hair; behind, mallet (control mark); dotted border.
 - Rev. Winged caduceus; to r. M•PLAETORI, downward; to l. CEST•EX SC, downward; dotted border.

Crawford 405/5; Syd. 807; Babelon 5 (Plaetoria).12

The date of this issue was not clear. Sydenham suggested 68 to 66 B.C. while Crawford has used 69 B.C. A more realistic dating of this overtype is based on an analysis of the Mesagne hoard, which dates the issue to about 57 B.C.¹³

- *3b. L. Julius Bursio.
 - Obv. Male head r.; behind, control mark, but not visible; dotted border.
 - Rev. Victory driving quadriga r., holding reins in l. hand and wreath in r.; in exergue, L•IVLI•BVRSIO; dotted border.
 - 3.95 g, Hersh Collection, ex L. A. Lawrence Collection. Crawford 352/1 (85 B.C.), Syd. 728 (83 B.C.), Babelon 5 (Julia).

This denarius overstrike appeared in Crawford's table of overstrikes¹⁴ as no. 112, (a), where the undertype was incorrectly identified as 350A/2, apparently an inadvertent transcription error by Crawford.

A previously unpublished denarius overstrike has one issue of the moneyer C. Vibius C. f. C. n. Pansa overstruck on another of his issues from the same year:

- *4a. C. Vibius C. f. C. n. Pansa.
 - Obv. Laureate head of Libertas r.; behind, LIBERTATIS, downward; dotted border.
- ¹² E. Babelon, Description historique et chronologique des monnaies de la République Romaine (Paris, 1885–86), hereafter, Babelon.
 - 13 C. Hersh and A. Walker, "The Mesagne Hoard," ANSMN 29 (1984), p. 133.
 - ¹⁴ Crawford, table 18, pp. 105 17, hereafter, Crawford, table.



Rev. Roma seated r. on pile of arms; to r. Victory flying l. crowning Roma; on l. C-PANSA-C-F-C-N, downward; dotted border.

Crawford 449/4 (48 B.C.), Syd. 949 (48 B.C.), Babelon 20 (Vibia).

This denarius of Pansa was overstruck on:

*4b. C. Vibius C. f. C. n. Pansa.

Obv. Mask of bearded Pan r.; below, PANSA; dotted border.

Rev. Jupiter Axurus seated 1., holding patera and scepter; to 1. IOVIS AXVR, upward; to r. C•VIBIVS•C•F•C•N, downward; dotted border.

3.34 g, Hersh Collection. Crawford, table cont., 117a.¹⁵ Crawford 449/1 (48 B.C.), Syd. 947-48 (48 B.C.), Babelon 18-19 (Vibia).

Another new silver overstrike apparently occurred to remedy a striking error in the mint. An obverse of Crawford 487/1 was inadvertently paired with a reverse of 487/2B. When this mistake was discovered by some control within the mint, the coin was restruck with both of the types of 487/1. The overtype is:

*5a. Petillius Capitolinus.

Obv. Head of Jupiter r.; to l. CAPITOLINVS, downward; dotted border.

Rev. Hexastyle temple (Capitoline temple); below, in exergue, PETILLIVS; dotted border.

Crawford 487/1 (43 B.C.), Syd. 1149 (37 B.C.), Babelon 1 (Petillia).

The reverse of the undertype is from another issue of the same moneyer:

*5b. Petillius Capitolinus.

Obv. As 5a

¹⁶ The last item in Crawford's table of overstrikes is no. 116. Rather than establish a separate system of enumeration, additional overstrikes will continue Crawford's numbering and be identified as Crawford, table cont.



Rev. Hexastyle temple (Capitoline temple); to l. S, to r. F; dotted border.

Crawford 487/2b (43 B.C.), Syd. 1151 (37 B.C.), Babelon 3 (Petillia).

3.83 g, Hersh Collection. Crawford, table cont., 118a.

UNPUBLISHED ROMAN REPUBLICAN BRONZE OVERSTRIKES

- *6a. Overtype, a reduced-weight Roman anonymous quadrans (Crawford 56/5 or 197-198 B/4) overstruck on b. an uncia of Capua (Giard 16)¹⁶ or Atella (Giard 3) with the types head of Jupiter r./Victory standing r., crowning trophy.
 - 4.03 g, Hersh Collection. Crawford, table cont., 119a.
- *7a. Overtype, a reduced-weight Roman anonymous triens (Crawford 56/4 or 197–198 B/3) overstruck on b. a bronze of the Bruttii (Bruttium) (SNGANSBruttium-Sicily 1, 44–59) with the types head of Zeus r./eagle standing l.
 - 5.86 g, Hersh Collection. Crawford, table cont., 120a.
- *8a. Overtype, a Roman uncia, with a corn-ear mintmark (Crawford 42/4), overstruck on b. a bronze of Carthage (SNGCopNoAfrica 326-29) with the types head of Tanit l./horse walking r.; behind horse, caduceus.
 - 8.09 g, Hersh Collection. Crawford, table cont. 121a.
- *9a. Overtype, a much-reduced Roman anonymous sextans (Crawford 56/6 or more likely an issue of sextantes struck with Crawford 197–198 B/1-4) overstruck on b. a bronze of Carthage (SNGCop-NoAfrica 109–19) with the types head of Tanit l./horse standing r.; behind horse, palm tree.
 - a. 3.01 g, Schaefer Collection. Crawford, table cont., 122a.
 - b. 2.44 g, Schaefer Collection. Crawford, table cont., 122b.
 - c. 2.36 g, Hersh Collection, ex Tiber Hoard (1983). Crawford, table cont., 122c.
- ¹⁶ J.-B. Giard, "La monnaie de Capoue et le problème de la datation du denier Romaine," *Congresso Internazionale di Numismatica 1961, ATTI* (Rome, 1965), p. 235.



*d. 1.89 g, Hersh Collection, ex Tiber Hoard (1983). Crawford, table cont., 122d.

These four coins may be the same as the piece listed in *CMRR* as g, on page 337. If so, Crawford has erred, as there is definitely no mint mark on the Roman overstriking type on these bronzes, most of which came from a hoard from the Tiber, near Rome. These very light weight pieces may have been struck over Carthaginian bronzes that were booty from or struck in connection with the Third Punic War.

- *10a. Overtype, an uncertain semuncial as overstuck on b. an uncial semis (Crawford 197–198 B/2, Syd. 302a).
 - 9.50 g, Witschonke Collection. Crawford, table cont., 123a.

SOME ADDITIONAL SPECIMENS OF PREVIOUSLY PUBLISHED ROMAN REPUBLICAN BRONZE OVERSTRIKES FROM U.S. COLLECTIONS

- 11. *a Crawford 8.17 Not in Hersh.
 - *b. 12.25 g, SNGANSLucania 1442.
 - *c. 10.62 g, Hersh Collection.

The overtype here is a biunx, with the types head of Sol facing/elephant standing r., which was formerly considered to have been issued by Velecha in Campania. E. S. G. Robinson suggested instead Volcei (Vulci) in Lucania. Livy states that this town was retaken by the consul Quintus Fulvius Flaccus in 209 B.C. Robinson's attribution is now generally accepted.

- 12. Crawford 15. Hersh 38.
 - h. 25.59 g, Witschonke Collection, ex Brand Collection, Sotheby, 2 Feb. 1984, 333.
- 13. Crawford 18. Hersh 39.
 - o. 13.57 g, Schaefer Collection.
- ¹⁷ The coins listed by letter in this section are specimens neither listed in Crawford's table nor in CMRR's addenda to the table.
- ¹⁸ E. S. G. Robinson, "Carthaginian and Other South Italian Coinages of the Second Punic War," NC 1964, p. 43.



- 14. Crawford 21. Hersh 10.
 - b. 16.17 g, Schaefer Collection.
- 15. Crawford 22. Hersh 20.
 - p. 16.76 g, Witschonke Collection, Dorotheum 11, 12 Nov. 1982, 232.
 - q. 16.76 g, Schaefer Collection.
 - r. 16.68 g, Schaefer Collection.
- 16. Crawford 23. Hersh 22b-g.
 - p. 7.04 g, Schaefer Collection.
 - q. 6.67 g, Hersh Collection.
 - r. 6.33 g, Hersh Collection.
 - s. 6.22 g, Schaefer Collection.
 - t. 5.50 g, Hersh Collection.
 - u. 5.37 g, Schaefer Collection.
 - v. 5.31 g, Schaefer Collection.
- 17. Crawford 24. Hersh 5a.
 - *b. 7.09 g, Witschonke Collection.
- 18. Crawford 37. Hersh 51.
 - b. 9.89 g, Schaefer Collection.
- 19. Crawford 38. Not in Hersh.
 - b. 6.09 g, Hersh Collection.
 - c. 5.74 g, Schaefer Collection.
 - d. 5.26 g, Witschonke Collection
- 20. Crawford 45. Hersh 2.
 - *b. 2.31 g, Hersh Collection.
- 21. Crawford 47. Hersh 16.
 - t. 3.95 g, Schaefer Collection.
- 22. Crawford 49. Hersh 17.
 - u. 3.19 g, Hersh Collection.
- 23. Crawford 51. Hersh 18.
 - l. 4.15 g, Hersh Collection.
 - m. 3.32 g, Hersh Collection.
- 24. Crawford 64. Hersh 21.
 - g. 7.78 g, Witschonke Collection.
 - h. 5.68 g, Hersh Collection.
 - i. 5.34 g, Schaefer Collection.



The overtype of this group of overstrikes is Crawford 72/7 rather than Crawford 69/5, in most cases.

- 25. Crawford 65. Hersh 23-25.
 - ab. 8.17 g, Schaefer Collection (Hersh 23-25).
 - ac. 7.68 g, Schaefer Collection (Hersh 24).
 - ad. 6.77 g, Schaefer Collection (Hersh 23-25).
 - ae. 5.96 g, Hersh Collection (Hersh 24, 25).
 - af. 5.86 g, Hersh Collection (Hersh 24, 25).
 - ag. 5.74 g, Hersh Collection (Hersh 24, 25).
 - ah. 5.06 g, Schaefer Collection (Hersh 24).
- 26. Crawford 67. Hersh 53a.
 - b. 25.33 g, Hersh Collection.
- 27. Crawford 76. Not in Hersh.
 - b. 11.27 g, Schaefer Collection.
- 28. Crawford 81. Hersh 59a.
 - b. 6.39 g, Hersh Collection.
- 29. Crawford 95. Hersh 15.
 - j. 5.65 g, Schaefer Collection.

Correction of the Hersh-Crawford Concordance (Crawford, page 119)

HERSH	CRAWFORD
72	111, not 112
73	112, not 113
74	113, not 114

KEY TO PLATES

1 a. Overstrike		
b. Undertype	obv., 12:00	rev., no traces
2 a. Overstrike		
b. Undertype	obv., 11:00	rev., 4:30
3 a. Overstrike	obv. on rev.	rev. on obv.
b. Undertype	rev., 10:30	obv., 1:00



1	a. Overstrike	obv. on rev.	rev. on obv.
-1	b. Undertype	rev., 1:00	obv., 1:00
_		·	•
Э	a. Overstrike		• • • •
	b. Undertype		rev., 2:00
6	a. Overstrike		
	b. Undertype	obv., 11:00	rev., 11:30
7	a. Overstrike		
	b. Undertype	obv., 5:00	rev., 11:00
8	a. Overstrike	obv. on rev.	rev. on obv.
_	b. Undertype	rev., 6:00	obv., 3:00
		•	·
9d	a. Overstrike	obv. on rev.	rev. on obv.
	b. Undertype	rev., 5:00	obv., 3:30
10a	a. Overstrike		
	b. Undertype	obv. 10:30	rev. 1:00
		,	,
110	a. Overstrike	obv. on rev.	rev. on obv.
	b. Types of overtype		
	c. Undertypes	rev., 12:30	obv., 3:00
17b	a. Overstrike		
	b. Undertype	obv., 12:00	rev., 10:30
	z. chacity po	owing rando	10.00
20 b	a. Overstrike	obv. on rev.	rev. on obv.
	b. Undertype	rev., 3:00	obv., 9:00



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THE SICILIAN COINAGE OF SEXTUS POMPEIUS (CRAWFORD 511)

(PLATE 9)

JANE DEROSE EVANS

Sextus Pompeius was a relatively prolific minter, striking coins in bronze, silver and gold; these coins are widely used as touchstones of stylistic analyses, as they are thought to be closely dated and the location of their mints fairly well established. Yet aside from an in-depth study by T. Buttrey on Sextus' Pietas denarii and to a lesser extent the other Spanish issues studied by L. Laffranchi, Sextus' coins have not

¹ This article was initiated as a summer project at the American Numismatic Society, during the Graduate Seminar of 1983. I am indebted to the curators of the ANS for their help, and especially to William E. Metcalf for providing guidance at the various stages of completion of the project. Wolfgang Hahn kindly provided me with encouragement and photographs from dealers catalogues from the Institut für Numismatik. Charles Hersh not only spent time discussing my ideas but allowed me to see coins from his collection. Thanks are also due closer to home, to Donald White and Barbara Burrell who read the manuscript when it was my master's thesis.

I am grateful to the following for providing casts or photographs: Gunther Dembski, Kunsthistorisches Museum, Vienna; Anne Kromann, Copenhagen Museum; Ermanno A. Arslan, Milan; H.-D. Schultz, Berlin; J. P. A. van der Vin, the Hague; Andrew Burnett, the British Museum, London; Bernhard Overbeck, Munich; J. Lallemand, Brussels; Cathy E. King, Ashmolean Museum, Oxford; Joachim Raeder, Kestner Museum, Hannover; Brooks Emmons Levy, Princeton; Jean-Baptiste Giard, Bibliothèque Nationale, Paris; Enrica Pozzi, Naples; Pilar Santalices Cid, Madrid; and T. R. Volk, Fitzwilliam Museum, Cambridge.

² T. V. Buttrey, Jr., "The 'Pietas' Denarii of Sextus Pompey," NC 1960, pp. 83-101; L. Laffranchi, "Alcuni problemi di geografia numismatica nella monetazione



been given the examination warranted by their importance in the Roman corpus. This is especially true of the post-Spanish coinages, which consist of one aureus and three denarius issues. Date of the issues (oscillating slightly between 43 and the Battle of Naulochus in September of 36) and place of the mint (unanimously located in Sicily and often said to be in Messana) have almost been taken as fixed points.

One purpose of this article was to study the often complex iconography in some depth and to clarify details of propaganda clear to the Roman viewer but since obscured. Study was made of the historical circumstances during the minting, and the hoard evidence was gathered to see if it could provide clues to the location of the mint. A die study was made of all available specimens in order to clarify the actual technique of minting; results included information on the reuse of dies and the pace of minting. The results were subjected to statistical analysis to confirm the estimate of the number of dies used for each issue. The metrology of available specimens was charted and compared to the average weight of a denarius in the late Republic. Based on the evidence, I have proposed both a chronology and circumstances of minting which vary with the generally accepted conclusions concerning Sextus' place of and date of minting.

USING THE CATALOGUE

Sextus issued four major coin types (see pages 104–24). Each obverse and reverse die within a type has been given an identification number so that die linkage in each series can be easily seen: 1.1 indicates a coin with obverse 1 and reverse 1, while 2.3 indicates a coin with obverse 2 and reverse 3. In addition a running total of all the different combinations is given. Recut dies are labeled with the letter "r," and "brock" stands for brockage. The citation forms for museums and sale catalogues are those used by H. Troxell, *The Coinage of the Lycian League*, ANSNNM 162 (1982) with the following additions.

neopompeiana d'Hispania," RIN 1950-51, pp. 91-99, "Gli assi di Sesto Pompeo coniati in Sicilia," Boll. del Circolo Numismatico Napoletano 1916, 5 pp., and "La Zecca di Sesto Pompeo in Ispagna," RIN 1912, pp. 511-16.



1. Collections

Hersh Private coll.

HSA Hispanic Society of America, New York, on

deposit at the ANS

Madrid Museo Arqueológico Nacional Naples Museo Archeologico Nazionale

Philadelphia University Museum Princeton Firestone Library

2. Publications

Chitescu M. Chitescu, Numismatic Aspects of the History

of the Dacian State, trans. Cornelia Urdea

(Oxford, 1981).

Cutroni A. T. Cutroni, "Ripostigli repubblicani romani

del Museo di Palermo," AIIN 1962-64, pp.

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Malter Joel Malter, Encino, CA

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Stacks Stacks, New York

Tietjen Tietjen and Co., Hamburg Vecchi Schwer Vecchi Schwer, London

Vinchon Jean Vinchon, Paris (formerly M. Ratto)

HISTORICAL BACKGROUND

Our information about Sextus is somewhat distorted by the ancient sources. The accounts left to us are derived from pro-Augustan sources



and most were written in the Imperial period. Exceptions are Cicero (of course, reports from him end before Sextus controlled Sicily) and Horace. Our fullest accounts are the histories of Appian and Cassius Dio; the former relied upon Octavian's autobiography, the latter on Livy, for information.³

After the death of his father, Pompeius Magnus, Sextus fled to Africa to join his older brother, Cnaeus. Both subsequently joined their supporters in Spain, a traditional stronghold of the Pompeian family. Here they raised an army to fight Caesar's lieutenants, meeting with success until Caesar himself defeated them both at the Battle of Munda, 17 March 45 B.C.4

Sextus stayed in Spain, gathered a second army and built a fleet, with which he soon took control of Sicily.⁵ Although he was not present in Rome when Caesar was murdered, Octavian added his name to the proscription list in 43, in order to confiscate his property and formally exile him from the city. In the spring of the same year the Senate appointed Sextus prefect of the fleet, in an attempt to bring him back under its control.⁶ While Octavian was busy consolidating his own position in Italy, Sextus took control of the seas, essentially becoming a pirate, and in 42 controlled Sicily, Sardinia, and Corsica. Florus wrote



³ See Hadas, pp. 162-66. Sources used to reconstruct the life of Sextus are: App., BCiv 4.83-85, 96, 5.25, 63, 67, 72, 77-91, 100, 103-122, 133-44; Aug., Res Gest. 5.25; Cicero (a series of letters describes Sextus' progress until July of 44), Fam. 11.1.4, Att. 12.37a, 14.4, 14.13, 14.22, 15.20, 15.21, 15.29, 16.4; Cass. Dio 42.5.7, 43.30.4, 37-38, 46.48.3-4, 48.15.2, 17.3-20.2, 29 31, 36-38, 45.4-49.11, 17-18; Florus 2.13.73-87, 18.1 5, 7 9; Horace, Epod. 9; Livy, Epit. 115, 123, 127-129, 131; Luc., Pharsalia 8.633-34, 9.117-66; Mart., Epigrams 5.74.1; Oros. 6.18-19; Plut., Caes. 56, Pomp. 78.4; Strab. 3.2.2; Suet., Aug. 16, Caes. 35; Vell. Pat. 2.72.4,5, 73.3, 77.1-2, 79.3-5. For Appian's sources, see Loeb introduction, vol. 1, pp. 1x-x; Dio also mentioned Augustus as a source, see F. Millar, A Study of Cassius Dio (Oxford, 1964), p. 34.

⁴ Oros. 6.16 mistakenly believed that Sextus was killed at Munda; however, only Cnaeus died after the battle.

⁵ App., *BCiv* 5.25 "He had become rich by sea-robbery and had a numerous fleet and full crews" and 4.85 "... Pompeius was well provided with officers, ships, troops, and money."

⁶ App., BCiv 4.84; Cass. Dio 48.17.1.

that Sextus raided Puteoli, Formiae, the coast of Campania and "even the mouth of the river Tiber."

In 42, Octavian sent a fleet under Q. Salvidienus Rufus to battle with Sextus. It was destroyed by a storm "at the entrance of the straits near the promontory of Scyllaeum." The Treaty of Brundisium in 40 acknowledged Sextus' control of Sicily and Sardinia, but a second treaty in the spring of 39, the Treaty of Misenum, was needed to affirm his hold on the islands. The treaty also promised him a priesthood and a future consulship.

Sextus later attacked southern Italy and in 38 Octavian sent a second fleet against him. After a battle favoring Sextus, Octavian's fleet was again wrecked by a storm off the Scyllaeum promontory. Sextus seems to have begun calling himself Neptune's son after the second such favorable intervention by the sea god. Octavian's bad luck was tripled when his next fleet, sent in 36, was wrecked off the Palinurus promontory in the Battle of Mylae. Finally, Sextus was defeated by Octavian at the Battle of Naulochus in September of 36.

Sextus fled to Mitylene, in Asia Minor, hoping to be able to find safety in his alliance with Antony. Here he began to refit his ships and raise an army until he was killed, in the end of 35, by a lieutenant of Antony.¹⁰

THE COINAGE

The earliest coinage of Sextus is the Pietas issue (Plate 9, 1), already carefully studied by T. V. Buttrey. Through a die link to Cnaeus' coins, Buttrey has established mint(s) in Spain and proposed a date of late 45 to early 44 for the issue.¹¹

- ⁷ Florus 2.18.1-2.
- ⁸ App., BCiv 4.85; Cass. Dio 48.18 believed that Rufus drove Sextus out of Italy.
- App., BCiv 5.100; Cass. Dio 48.48.5; Pliny, NH 9.55; Florus 2.18.3 wrote that Sextus sacrificed to Neptune "... in order to induce the ruler of the sea to allow him to reign in his domain."
 - ¹⁰ For a discussion of the date, see Hadas, p. 159.
- ¹¹ Buttrey (above, n. 2), pp. 98-99; see also L. Laffranchi, "Alcuni problemi" (above, n. 2).



AUREUS (CRAWFORD 511/1)

The remaining issues will be treated in the order found in Crawford's catalogue. The obverse of the aureus (Plate 9, 2) depicts the head of Sextus surrounded by his agnomina and title MAG(nus) PIVS IMP(erator) ITER(um) and the whole circled by an oak wreath. The reverse type consists of a lituus, two portrait heads facing each other and a tripod. Sextus' title of PRAEF(ectus) CLAS(sis) ET ORAE MARIT(imae) EX S(enatus) C(onsultum) is placed above and below the heads.

The inscription on the obverse identifies the portrait as Sextus. He has taken the agnomen of his father, Magnus; interestingly, he felt it necessary to identify himself as Sextus (Pompeius) Magnus Magni Filii, or Sextus Pompeius Magnus, son of Pompeius Magnus, on coins minted in Spain. By the time he minted his aurei, such reference to his inheritance was no longer needed—he is simply Magnus. The second part of his agnomen, Pius, was introduced during his minting in Spain, but is found on all of his later issues. As will be shown in the discussion on the iconography of his coin types, Sextus punctiliously insisted on portraying his right to take vengeance on the slayers of his father and brother, here by the adoption of the epithet Pius (literally "dutiful" or "devoted").

The title imperator iterum will be discussed later, as it may be used to narrow the date of the minting of the coin. It is sufficient here to mention that Sextus coupled his name with the epithet of a successful general from the beginning of his coinage in Spain. Grant has tried to show that the epithet was a personal name inherited from his father rather than an honorific (as it had been throughout the Republic); yet as it is placed after Sextus' agnomina, his interpretation is suspect. The title simply refers to one of his early military victories. 13 By the time he



¹² Buttrey (above, n. 2), pp. 90–92; Buttrey suggested that Sextus took the epithet only after the death of Caesar, as it is not found on the earliest coins minted in Spain. He has cogently argued (p. 93) against Syme's theory that Magnus Pius is to be understood as Pompeius' nomen and cognomen (R. Syme, "Imperator Caesar," *Historia* 7 [1958], pp. 174–75).

¹³ M. Grant, From "Imperium" to "Auctoritas" (Cambridge, 1946), pp. 22-23, 409, 415-16; Buttrey (above, n. 2), pp. 92-93, noted that Grant based his argument on a rather perverse coin.

struck the aurei and three denarii discussed here, he had named himself a general hailed by his troops for the second time.

The title on the reverse (prefect of the fleets and of the shore) refers to the office given to Sextus by the Senate in an effort to appease him; it appears on every issue minted after Sextus had been given the title. It was the same office the Senate had given his father in 67 in an attempt to rid the sea of pirates. Hill has correctly pointed out that the EX SC, generally thought to refer to the right to mint under extraordinary circumstances, here simply means that the Senate conferred the office of prefect upon Sextus.¹⁴

Sextus is portrayed as a heavyset man, with fleshy cheeks, a bulging forehead and a thick neck.¹⁵ His straight hair is combed forward from the back of his skull. As will be seen on some of the more carefully cut dies of the Pompeius series, his hairstyle imitates that of his father in having four rows of hair along the back with squared locks on the nape of his neck and strands of hair that lie across the top of his scalp. However, he does not have the Alexandrian anastole of Pompeius Magnus.

A light beard covers Sextus' cheeks. Beards are not common on late Republican portraits, and Sextus' beard seems to be a specific iconographic detail. Most likely, the portrait represents Sextus after he had taken a vow not to shave until his father's and brother's assassinations had been avenged. Although this vow is not mentioned in any of the ancient sources, there is a better documented oath of this kind in Octavian's refusing to shave until all of his (adopted) father's assassins were brought to justice. In fact, Octavian is shown bearded on his own aureus of about this time (Plate 9, 3). According to the ancient sources, allowing one's beard to grow is a normal sign of mourning during the late Republic and early Empire: Cato refused to shave



¹⁴ G. Hill, Historical Roman Coins (London, 1909), p. 127.

¹⁸ See also a gem identified as a portrait of Sextus, said to be of Renaissance workmanship, British Museum no. 1552, signed by Agathopous, discussed in A. H. Smith, *Catalogue of Engraved Gems in the British Museum* (London, 1888), p. 35, but not illustrated; see also E. Babelon, *La Gravure en pierres fines* (Paris, 1894), p. 169.

¹⁶ Crawford 540/1 dated to 36. Coins with a bearded Octavian begin in 43 (Crawford 490) and end in 36 with this aureus and a denarius with the same types (Crawford 540/2).

during his mourning for the passing of the Republic, and Octavian (now Augustus) adopted this sign of mourning again after the loss of Varus' legions. The numismatic evidence is no less strong on the point, for Antony is also shown bearded after Caesar's assassination.¹⁷

The oak wreath which circles the obverse is thought by Hadas to refer to Sextus' role in saving citizens' lives by providing asylum to Romans named on the triumviral proscription list. Weinstock, in his more general research into the use of oak wreaths in the late Republic, wrote that prior to the first century, the oak wreath was only given by a citizen to the man who had saved his life in battle. Yet after the second quarter of the first century, the wreath could be awarded to a general or a statesman who had saved Rome (Weinstock gave the examples of Caesar, in 45, and Cicero, for whom an oak wreath was proposed after he had put down the Catilinarian conspiracy). 18 As we have no evidence that an oak wreath was formally voted for Sextus, it is likely that this is an honor which he awarded himself for the reason which Hadas suggested. Yet the coin should not be viewed in isolation; an oak wreath had earlier appeared on aurei of Marcus Brutus (Plate 9, 4, Crawford 506/1) minted in 43-42. Brutus may have originated the device of placing the prize on coins to advertise his role as a saviour of the Roman state.

The portrait heads on the reverse depict Pompeius Magnus and Cnaeus Pompeius.¹⁹ As the portrait on the right is shown bearded, he must be one of Pompeius' sons; as with Sextus, the beard must be taken to represent Cnaeus in mourning after his father's death. Since the portrait on the obverse of the aureus is Sextus, the young man on the reverse of the aureus must be Cnaeus, the older man Pompeius Magnus. Cnaeus has a high rounded skull, a small face and long neck. His cheeks are not as full as Sextus', but his hair is thicker, cascading from the top



¹⁷ Luc., *Pharsalia* 2.372-6; Suet., *Aug.* 23; see Crawford 480/22, 488, 492, 493, 496, for examples.

¹⁸ Hadas, p. 69; S. Weinstock, *Divus Julius* (Oxford, 1971), pp. 163-65.

¹⁹ This identification is proposed by all modern authors, e.g. Crawford 511/3a, Syd 1346, H. Zehnacker, *Moneta: Récherches sur l'organisation*, 2 vols. (Rome, 1973), p. 1015, although sale catalogues do not consistently identify the portraits correctly.

of his skull in well-mannered rows.²⁰ To either side are a lituus and tripod, symbols of a priesthood. There has been some discussion about whether the implements signify the priesthood of Sextus (awarded by the Treaty of Misenum in 39) or of Pompeius Magnus, yet priestly symbols (especially the lituus) appear so frequently on Republican coins that it gives one pause in assigning the symbols to one man or the other.²¹

The iconography of Sextus' aurei can best be explained by reference to contemporary aurei. Pompeius Magnus had minted aurei not long before Sextus did, and there is a degree of similarity between the two, especially in the use of a head surrounded by a wreath on the obverse (Plate 9, 5). Note also Pompeius' use of only his agnomen on the obverse, as well as his emphasis on priestly implements, here a jug and lituus. The number of aurei minted in the early years of the Civil War far surpasses production in gold from earlier in the century, yet this is to be expected in a time of emergency.²² Aurei were minted by Cassius, Brutus, Q. Cornificius, and Octavian, among others; most of these coins are similar to Sextus' in the obverse portrayal of the man under whose aegis the moneyer struck.

Although Crawford estimated that there were 15 dies each used for the obverse and reverse,²³ a die study revealed that there are only two

- ²⁰ Buttrey, "The Denarii of Cn. Pompeius Jr. and M. Minatius Sabinus," ANSMN 9 (1960), p. 87, has effectively argued against the commonly accepted identification of Cn. Pompeius Jr. on coins minted in Spain, although Crawford 477/2 still lists the head as such.
- ²¹ Hadas, p. 78, n. 90; A. Alföldi, "The Main Aspects of Political Propaganda...," *Essays Mattingly*, p. 86; Hill (above, n. 14), p. 128.
- ²² See J. Kent, *Roman Coins* (London, 1978), p. 17, beginning with Julius Caesar (Crawford 452/1).
- 28 Crawford 511/1. Crawford's method of estimating the number of dies for each issue depends on his choice of representative hoards (Crawford, p. 672). The number of coins is compared to the number of dies attested in the hoards and an estimate is thereby produced of the number of dies Crawford felt should be exhibited in the entire issue. He admitted that "the representation of small issues is quite erratic" and stated that the Triumviral period is further complicated because the triumviral coinage remained in circulation long after it had been struck. Further, he thought that the number of obverse dies attested in each hoard was underrepresented. There are additional problems with his method for Sextus' coins. For instance, none of



dies for the obverse and three for the reverse. One pair of obverse and reverse dies (2.3) is found in isolation; obverse 1 is linked to reverses 1 and 2 (Figure 1). This would suggest there was, reasonably enough, only one anvil striking; there may have been an interruption of the minting process, resumed with dies 2.3, but this can only have been a very temporary stoppage, as both obverses and all the reverse dies are so stylistically similar that they must have been cut by the same hand and it is hard to visualize a long pause in the minting.



Fig. 1: Aureus Die Links

Obv.				Rev.	
n	=	38	n	=	38
d	=	2	d	=	3
D	=	1.95	D	=	2.99
S	±	0.07	S	+	0.14

Fig. 2: AUREUS DIE ESTIMATE

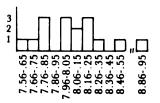


Fig. 3: Aureus Weights (0.1 g)

That the figures from the present die study may be close to the actual number of dies used for the issue is confirmed by statistical analysis, based on G. Carter's most recent equations for estimating the total

Crawford's representative hoards contains any Pompeian aurei. The three denarius issues were present in the Avetrana (Italy), Seica Mica (Romania), Maillé, Bourgueil, and Aquileia (France). Terranova Pausania (Sardinia), and Bagheria (Sicily) hoards. The total number of coins examined is most revealing; 8 coins of 511/2, 17 of 511/3 and 3 of 511/4. Crawford's die estimations based on these numbers yielded results of, respectively, less than 30, less than 51, and less than 30 obverse dies.

number of dies used for an issue.²⁴ Calculations of the estimated total number of dies resulted in an estimate of 2 obverse or 3 reverse dies, with a very low standard deviation (Figure 2). As will be apparent from the remaining die studies, Crawford's estimate of the number of dies per issue for Sextus' coins is always high and may be explained by Crawford's method being inappropriate for small issues.

The study of the metrology of the aurei was hampered by the relatively small number of weights published or available for the coins. For the 38 coins in the catalogue, only 16 weights were obtained. They are somewhat spread out and, excluding an unusually heavy piece, range from 7.58 to 8.50 g (Figure 3). The majority of the coins weigh between 8.0 and 8.2 g, with another group falling between 7.80 and 7.85 g. Without the heavy coin (1.1b), the mean is 8.035 g, which is the weight Crawford attested for the nearly contemporary coinage of A. Hirtius. Grierson's estimate of 7.80 g for a typical Augustan aureus is markedly below these late Republican aurei. 26

Neptune (Crawford 511/2)

Denarii with the head of Neptune (Plate 9, 6-7) repeat the titulature found on the aurei. Neptune is shown with flowing tresses, his ear locks caught up and his hair bound with a diadem. Two horns formed by his hair project from his brow, with a stray lock between them; these suggest Neptune's role as the bull of the sea. The trident over his shoulder confirms his identity. The inscription on the reverse is found in three varieties, all of which have been previously catalogued.

The reverse shows a naval trophy consisting of a trident, helmet, breastplate, two dogs of Scylla and an anchor. The arms of the trophy

- G. Carter, "A Simplified Method for Calculating the Original Number of Dies from Die Link Statistics," ANSMN 28 (1983), p. 202. Carter demonstrates that if n > 3d, then $D = \frac{n \times d}{1.069n 0.843d}$, where n = number of coins; d = number of dies;
- D = total estimated number of dies; and S = standard deviation. This formula is used for the results given in Figures 2, 5, 8, and 12.
 - ²⁶ Crawford, p. 593; P. Grierson, Numismatics (Oxford, 1975), p. 197.



terminate with a prow and an aphlaston, a fan-like object attached to the stern of a ship. Both are common as symbols of naval victory.²⁶ Around the flan is written the title of Sextus' office of prefect.

It has been recognized that Neptune is featured on Sextus' coins partly in reference to Sextus calling himself the son of the deity.²⁷ Such a claim to divine ancestry was not unusual in the days when Venus' and Hercules' descendants were also fighting for control of Rome. Sextus followed a trend which had only recently appeared in putting his own features on Neptune's face (see especially obverse dies 5 and 7, Plate 9, 6–7).²⁸ Ptolemy III Euergetes, ruled 246–221, was first shown with the trident of Neptune. On gold octodrachms minted in Alexandria after the death of Euergetes, the ruler is shown with a radiate crown, an aegis, and a trident over his shoulder.²⁹ Yet Sextus can be seen to be following a more immediate model, as coins of Q. Nasidius (probably minted for Sextus) show a portrait of Pompeius Magnus, labelled NEPTVNI, or son of Neptune, with a dolphin at the base of his neck and a trident in front of his face.³⁰

Neptune also appears on Sextus' coin in his role as the guardian of Sextus' fleet (as he is on the Pompeius denarii; the trident in the stern of the ship of the Pharos denarii alludes to the same thing). Neptune first appears on the obverses of denarii at the beginning of the first

- ²⁶ A. Brett, "The Aphlaston, Symbol of Naval Victory," TINC 1936.
- ²⁷ Alföldi (above, n. 21), p. 79; H. Mattingly, *Roman Coins* (London, 1962), p. 61; Hadas, p. 79, thought that since this claim of a divine ancestor was only found in later writers, it may have been an embellishment to Sextus' story.
- ²⁸ As noted by Zehnacker (above, n. 19), pp. 906, 1016; earlier, Janus' face was replaced by Pompeius Magnus on bronze coins minted by the Pompeians in Spain (Crawford 479). It has been suggested that the face of Pietas on A. Hirtius' coins (Crawford 466) eventually took on the features of Caesar; today this theory is generally discounted.
 - 29 E. Newell, Royal Greek Portrait Coins (New York, 1937), p. 104, fig. 8.
- crawford 483, giving the mint with Sextus and a date of 44/43; Nasidius is mentioned by Appian as one of the admirals of Sextus, engaging in the naval battle of 38. After Sextus had fled to Mitylene, Nasidius deserted to Antony to take part in the battle of Actium, after which nothing else is heard concerning him (App., BCiv. 5.139, Cass. Dio 50.13.5). Since the portrait of Pompeius Magnus is very close to that on Sextus' Sicilian coinage, and very dissimiliar to the Spanish portraits, Sydenham's date of 38–36 (p. 211) is preferred by the author for Nasidius' coins.



century; he is identified by the trident placed behind his head and wears a laurel wreath (this is the type used by Brutus). Sextus was the only moneyer who gave Neptune a diadem. Interestingly, L. Staius Murcus placed the diademed head of Neptune on the coins he minted in 42/41, immediately after he had joined Sextus with a number of ships (Plate 9, 8).³¹ The reverse of Murcus' coin also shows a trophy, as does Sextus' coin, but here flanked by two figures.

The use of a type representing the deity who provided special care for the moneyer is an old and often repeated motif. Octavian could not let Sextus' relationship with Neptune go unchallenged and so showed himself as a favorite of two gods, issuing coins depicting the thunderbolt of Jupiter and the tripod of Apollo (Plate 9, 9-10); the issues are dated by Crawford to 40 and 37, respectively.³² The ancient sources also report this jostling for divine favor. Appian (BCiv 5.98) recorded that before the storm off the Palinurus promontory, Octavian sacrificed to Saviour Neptune and Waveless Ocean, without effect. Suetonius (Aug. 16) described an incident after Octavian's defeat in 38, where Octavian yanked Neptune out of the procession to the games in the Circus Maximus: he is said to have declared, upon hearing news of the storm of 38, that, "I will win this war, whatever Neptune may do!" After the battle of Naulochus, Octavian took on the guise of the god whose favorite he had just defeated, striking coins with the bust of Victory on the obverse and with Octavian(?) standing, a mantle on his shoulders, his



³¹ Although originally associated with Caesar, Staius defected to Cassius when the latter arrived in Asia. He joined Sextus after the battle of Philippi, but was executed for conspiracy by Sextus in 38: App., BCiv 5.25; Cass. Dio 48.19.3, Vell. Pat. 2.72.4, 77.3. Crawford (510) gave a minting date of 42–41 for Staius' coins, saying, "The issue presumably belongs to the period of independent command...its types derive in part from those of Brutus and Cassius." Yet if the coin is to be dated to 42–41, Staius should already have joined Sextus in Sicily; his types would then reflect Sextus' interest in Neptune, as does the type used by Nasidius. Coins with the laureate Neptune are Crawford 348/4 (quinarius) Dossenus, 87 or 86 B.C.; Crawford 390/2 Trio, 76 or 74 B.C.; Crawford 507/2 Brutus/Longus, 43–42 B.C.; Syd 1274 Sosius, 32 B.C. A bareheaded Neptune is also recorded, Crawford 420/1 Hypsaeus, 60 or 58 B.C.

³² Crawford 523, 538/2.

²³ Octavian's sensitivity to the presence of Neptune's statue would have been acute, as it immediately followed that of Victory, see Ovid, *Amor.* 3.2.43-45.

right foot on a globe, and holding a spear and aphlaston on the reverse.³⁴

The die study for the group is illustrated in Figure 4. Eleven obverse dies are paired with fifteen reverse dies, far fewer than Crawford's estimate of less than 30 obverse and less than 33 reverse dies. 35 The linkage indicates that a die box was used and establishes an interesting relative chronology. Several dies have been recut; the first obverse die in the sequence has had the IMPITER recut so that the inscription ends just at Neptune's lip. The original die and the die with the recut inscription were used with all of the same reverses. Obverse die 2 was recut more dramatically. The inscription was changed from MAG to MAG and the hair was straightened. Obverse die 3 was recut in the same pattern as obverse die 2; the inscription was shortened to MAG, the hair and trident head were reworked. Recutting is also seen on obverse die 8. Here, Neptune loses his horns and the inscription is changed from IMPITER to IMPITER. Only one reverse die (11) seems to have been reworked, but it was recut twice. The left dog's snout was recut after it broke; in the second reworking, the dogs necks were lengthened, as well as the anchor bow, and the aphlaston takes on a strange three-pronged appearance (see 8r.11r).

The obverse dies seem to have been made by at least two artists. The first style is used exclusively for obverse dies 1 through 7, where the engraver preferred beards made of regular rows of hair. These are the dies which may show Neptune with Sextus' features. The second type is used at the end of the series (obverse dies 8–10), where Neptune has a long head and naturalistic beard. These dies show the most variety in the ligatures. The switch in styles may stem from the problems that seem apparent in obverse dies 1 through 7: often the beard receives a

- ²⁴ C. H. V. Sutherland and R. Carson, *RIC* (London, 1984), p. 59, 256, which is attributed to a mint in Italy, either Brundisium or Rome, but given a date of ca. 32-29. In light of the Neptune (also unbearded) seen in much the same pose on Sextus Pompeius' issue, the coin may be interpreted as Octavian's answer to Sextus' coin after the battle of Naulochus.
 - 35 Crawford 511/1.
- ³⁶ I believe that obverse die 11 probably belongs with these obverses but have found no die combinations that would place it in the series; hence, it appears at the end of all of the Neptune series.



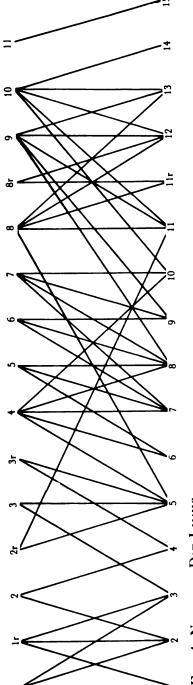


Fig. 4: Neptune Die Links

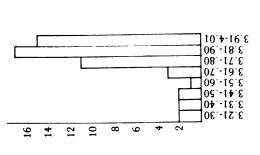


Fig. 6: Neptune Weights (0.1 g)

Kev.	150	15	15.23	0.40
•			li	
	¤	Р	Ω	S
Obv.	157	11	10.89	0.38
_	11		II	
	¤	р	Ω	S

Fig. 5: Neptune Die Estimate

cut across it that worsens with use. That the series runs from regularized beards to naturalistic, rather than the opposite direction, can be seen by the progression of the obverses used with reverse die 10. The reverse is broken when it is used with obverse dies 7 and 10; it is seen unbroken with obverse die 4. Such recutting of dies seems to show that great economy was desired in producing the coins.

Figure 5, again using Carter's formula for the estimated number of dies in a series, suggests that all obverse and reverse dies of the series have been identified. As with the aureus issues, the standard deviation is very low: for the 11 obverses, it is \pm 0.23; for the 15 reverses, it is \pm 0.40.

This series is unlike any of the other Sextus issues in its toleration of low weights. In fact, no coins weigh more than 4 g, although a high proportion (see Figure 6) of the sample falls at 3.87 g. Fully 60 percent of the sample weights, however, are below the mean of 3.79³⁷ and below Crawford's estimate of the weights of first century denarii.³⁸

Pompeius (Crawford 511/3)

Pompeius Magnus is portrayed on the obverse of the most common coin minted by Sextus. The portrait is flanked by a lituus and jug; between these symbols of the priesthood runs the inscription MAG PIVS IMP ITER (no variants appear, Plate 9, 11).

In the best dies, Pompeius is shown as a mature man with fleshy jowls. His hairstyle is very similar to that seen on Sextus on the aurei: four ordered rows of hair (which are also shown as three, or three rows with an extra 'bead' on dies 1, 5, and 6) rise to an anastole over his forehead. In profile, his nose is indented, but often has a bulbous tip. His mouth is small, he has a rounded chin and his forehead is shown furrowed.



³⁷ For the aureus series 31 percent of the coins are below the mean; the Pompeius and Pharos issues are within the same range with 39 and 42 percent of the coins, respectively, falling below the mean weight.

³⁸ Crawford, p. 594, gives a weight of 3.84-3.86 g; Grierson (above, n. 25), p. 198, has a typical first century B.C. denarius weighing 3.90 g.

As recognized by earlier scholars, the form of the portrait seen in the finer dies appears in the portrait of Pompeius currently in the Ny Carlsberg Glyptotek in Copenhagen.³⁹ Since Poulsen's study in 1936 on the portraits of Pompeius Magnus, scholars are generally agreed that there is a common model for Pompeius' portrait on Sextus' coins, including the coins minted in Spain (even though the Spanish dies have a much more awkward portrait), as well as on the coins of Nasidius and M. Eppius.⁴⁰

The reverse has three figures. In the middle, an unbearded, garlanded Neptune stands, holding an aphlaston, his right foot on a prow. He has a cloak draped over his left arm. To either side is a man, stepping away from the god, holding a person on his shoulders. The one on the left holds an man with an outstretched arm, the one on the right a woman shown frontally from the waist up, legs pointing sideways. The normal inscription, PRAEF CLAS ET ORAE MARIT EX SC, is found above Neptune and in the exergue.⁴¹

The two men to either side of Neptune are commonly identified as the Catanaean brothers, famous for their pietas for rescuing their father and mother from an eruption of Etna.⁴² By using these symbols of pietas,

- In fact, Helbig originally identified the portrait by these very dies: see W. Helbig, "Sopra un ritratto di Gneo Pompeo Magno," Rom Mill 1 (1886), p. 37. The head is given a Claudian date by V. Poulsen, Les Portraits Romains, vol. 1 (Copenhagen, 1962), p. 38. Poulsen, p. 40, and B. Schweitzer, Die Bildniskunst der römischen Republik (Leipzig, 1948), p. 124, believe the original, from which the Copenhagen head is derived, was the statue of Pompeius under which Caesar died (Plut. Caes. 66).
- ⁴⁰ As F. Poulsen, "Les Portraits de Pompeius Magnus," RA 1936, p. 19, and Schweitzer (above, n. 39), p. 124; O. Vessberg, Studien zur Kunstgeschichte der römischen Republik (Leipzig, 1941), pp. 135–36, disagrees, placing the Spanish coins in his type 1 and the Sicilian issues with Nasidius and the Copenhagen portrait type.
- ⁴¹ One variation in the reverse inscription (die 32r) which is not catalogued by Crawford reads PRAEF CLAS ET ORAE MARIT IX SC. This die originally showed the normal spelling of EX, but was recut to IX after the E disappeared.
- ⁴⁸ Crawford, 511/3; BMCRRSicily 7/12, n. 1. G. Hill, Coins of Ancient Sicily (London, 1903), p. 206, stated that the coins were thus 'perhaps' minted in Catana and the brothers were copied from a statue group in Catana described by Claudian in Carmina Minora 17. He cited the reverse of a bronze coin from Catana with the brothers in the same poses, inscribed KATANAIΩN (see his pl. 14, 16). Hill, p. 226, also had the deity between the brothers as Trinacrus, a son of Neptune rarely mentioned in ancient sources.



Sextus is deliberately contrasting his pietas with Octavian's. The Julii made a strong association between their family and Aeneas (celebrated for his pietas for rescuing his father from burning Troy) and had recently trumpeted their claim of descent from Aeneas on a coin struck by Caesar in 47/6 showing Aeneas bearing his father on his shoulder. Livineius Regulus repeated the type for Octavian.⁴³

As Sextus' family came from Picenum, Sextus' use of the Catanaean brothers can be seen to hold a deeper meaning than simply a symbol of pietas. Picenum fought against Rome during the Social War, though Sextus' family did not.⁴⁴ Thus the Pompeii could claim to be champions of the south Italians, a relationship Sextus emphasized in using the Catanaean brothers instead of Aeneas. The symbolism is clear. Aeneas typifies the pietas of the Julii and especially of Octavian in his attempt to bring his father's murderers to justice; Sextus counters with his own symbol of pietas to show that he, too, is piously attempting to avenge his father but, unlike Octavian, he consciously identifies himself with the south Italian heroes.⁴⁵

As can be seen in Figure 7, this die study was the most complicated of the series. There are 26 obverse dies used with 38 reverse dies. Several reverse dies were used with up to 6 obverse dies. This may show that several anvils, say 5 to 6, were in use simultaneously. The linkages with broken dies help prove the order of the obverse die use. Reverse die 29 is unbroken when used with obverse dies 8, 10, 14 and 16, but breaks during use with obverse die 21. Reverse die 32 shows the same pattern: with obverse die 15 the inscription is the normal MARIT EX S C, but was recut to read MARIT IX S C during use with obverse die 18. One obverse die (die 2) was recut twice; at first the inscription is reworked,



⁴³ Crawford 458, 494/3; for a discussion of the types, see the chapter "Aeneas" in my Ph. D. diss., "The Legends of Early Rome Used as Political Propaganda in the Republic and during the Time of Augustus," University of Pennsylvania, 1985.

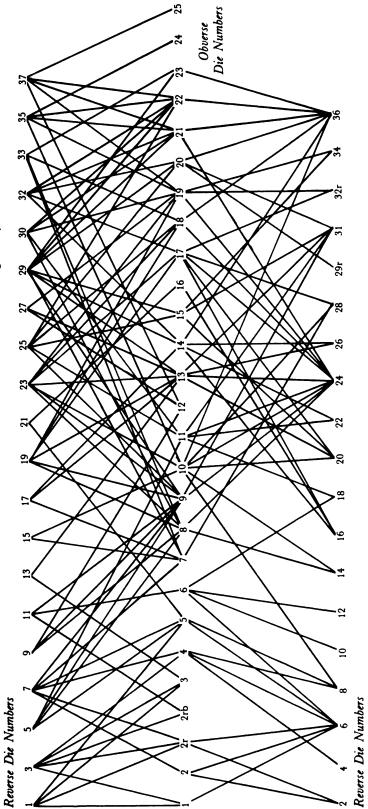
⁴⁴ Livy, Epit. 72, 74.

⁴⁵ One of the Catanaean brothers is commonly thought to be shown on denarii of M. Herennius (Crawford 308/1). As I have argued in my dissertation (above, n. 43), this identification is false; the coin does not depict a Catanaean brother but is Aeneas. The parallel between the deeds of the Catanaean brothers and Aeneas was recorded in the Antonine period by Hyginus, Fabulae 254. For reference see G. Karl Galinsky, Aeneas, Sicily, and Rome (Princeton, 1969), p. 54 and n. 102.

FIG. 7: POMPEIUS DIE LINKS

The linkage in this series is extremely complex. To relieve the density of the figure, the reverse die numbers have been alternately and arbitrarily split around

the obverse die numbers which are in the middle of the figure. This results in the top row of reverses consisting mainly of odd numbered dies and the bottom row of reverses consisting mainly of even numbered dies.





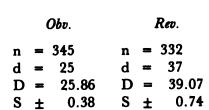


Fig. 8: Pompeus Die Estimate

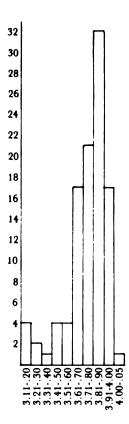


Fig. 9: Pompeius Weights (0.1 g)

leaving a gap between the V and S of PIVS. Two coins show that this die was further recut, although it seems it was not used very long in its second recutting, probably because the resulting inscription was sloppy and entirely unappealing.

Statistical calculation of the estimated number of dies again suggests that the 25 and 37 known dies used for the obverse and reverse, respectively may represent the entire series (see Figure 8). Crawford's estimates of 51 and 57 dies are again far off the mark.⁴⁶ Twelve brockages

46 Crawford 511/3.

occur (dies of two examples could not be identified), from a sample of 355 coins, or 3 percent of the sample (slightly below the 4 percent of the sample of the Neptune issue). These generally occur at the end of the issue.

The coin weights range from 3.13 to 4.03 g (Figure 9). The mode falls close to the weight of a typical Republican denarius (3.84–3.86 g), while the median and mean coincide at 3.75 g.

One Pompeius coin, from the Milan collection, has a recent countermark—an eagle with wings outstretched, placed in an irregular oval. This stamp has been called a mark of the Este family collection and occurs only on obverses with portrait heads.⁴⁷ Very recently, the stamp has been reattributed to the Gonzaga family.⁴⁸

Pharos (Crawford 511/4)

The last of the denarii minted by Sextus (Plate 9, 12) have, on the obverse, a ship and tower surrounded by his titles. The reverse depicts a rudder-wielding Scylla encircled by the title of Sextus' office of prefect. Scylla is shown with two symmetrical fish tails and the foreparts of three dogs instead of legs. She holds a rudder behind her head as if she were fighting. The reference is unmistakably to the promontory of the Sicilian coast, called the Scyllaeum, where Octavian lost two fleets. The inscription detailing Sextus' prefecture appears in varying forms, including one not catalogued by Crawford.⁴⁹

The obverse is generally thought to indicate the place of minting, as most of the flan is taken up by the depiction of a lighthouse. The lighthouse is a straight shaft on a three-step base, with two arched windows above a simple molding. The conical roof supports a statue of Neptune. As on the Pompeius coin discussed above, Neptune is shown



⁴⁷ See R. Mowat, "Monnaies romaines contremarquées dans les temps modernes," RN (1910), pp. 517–25, and C. Blunt, "Early Coin Collecting in Europe," Num 40, 11 (1947), p. 756.

⁴⁸ B. Simonetta, "Ancora a sull' acquiletta gonzaga e non estense," NumAntClas 12 (1983), pp. 333-41.

⁴⁹ Not catalogued by Crawford is PRAEF ORAE MARIT ET CLAS S C (reverse die 3). Crawford also catalogues an inscription I did not find elsewhere, PRAEF CLAS ET ORAE MARIT EX S C (University of Illinois coin).

unbearded, supporting his foot on a prow and holding an aphlaston with one hand. His cloak is wrapped around the opposite arm. Unlike the other coin, the Neptune on the Pharos issue is shown with a trident and, instead of a wreath, he wears a crested helmet.⁵⁰

Beneath the lighthouse is a suprisingly careful depiction of a warship (see detail, Figure 10). The ship has two(?) banks of oars, a ram and double rudder joined by a hooked tiller.⁵¹ The steering cabin can be seen in the stern; the stern itself is ornamented with a large aphlaston. In the bow a legionary eagle is supported by a square structure with four windows(?), topped with crenellations. Since commander's cabins are usually, if not always, pictured in the stern of the ship,⁵² it is more likely that this is a tower—a structure which allowed the marines to throw projectiles or grappling irons onto the enemy ship. They were mentioned by Appian as being used in the Battle of Naulochus; the towers must have been portable, as they were taken down before retreating.⁵³

- ⁵⁰ This combination of a beardless helmeted Neptune wearing a parazonium(?) has been called by J. Liegle, "Ein Münzbild des Sextus Pompeius," *TINC 1936*, pp. 212–13, a conflation of Neptune and Mars, ready for combat on land and sea. He further states that this Mars/Neptune conflation was meant to be seen as Sextus himself.
- ⁵¹ Grueber (BMCRRSicily 18) called the tiller a grappling iron, as representations of rudders generally do not include the tiller, being shown with a straight shaft. For a rudder with a hooked tiller attached, see an intaglio in the British Museum of an unbearded male identified by A. Alföldi, "Hasta Summa Imperii," AJA 63 (1959), pp. 5–6, pl. 5.1) as C. Asinius Pollio, cos. desig. 40.
- ⁵² L. Casson, Ships and Seamanship in the Ancient World (Princeton, 1971), p. 147 and n. 28, where he noted that commander's cabins were only sporadically depicted until the Augustan period.
- 53 App., BCiv 5.121 (he does not say whether the towers were found in the bow or stern, yet note App., BCiv 5.106 where at the Battle of Mylae the ships were equipped with towers both in the bow and stern). For representations of such towers see an archaistic second century A.D. relief in the Palazzo Spada in Rome. It is shown crenellated, though in the stern (Casson [above, n. 52], fig. 114 and p. 118, n. 74). A graffito from Alexandria, dating to the first century B.C., shows the tower in the bow, equipped with a fire pot (Casson, fig. 115). A relief from Praeneste (now in the Vatican), dated to the second half of the first century B.C., shows a substantial crenellated structure in the bow (Casson, fig. 130); a second relief, from Pozzuoli (now in Naples), dated from the first century B.C. to the first century A.D., shows a smaller structure without crenellations in the bow (Casson, fig. 131).



The stern is further ornamented with an oversize trident and what has been called a scepter tied with a fillet (or diadem), a thyrsus or a flag-staff.⁵⁴ The same staff is shown on two other Republican coins. The first dates from the Social War and portrays the flagship of Mithridates. The other is a legionary coin of Antony again depicting the flagship of the fleet.⁵⁵ This staff can be seen regularly on reliefs of ships

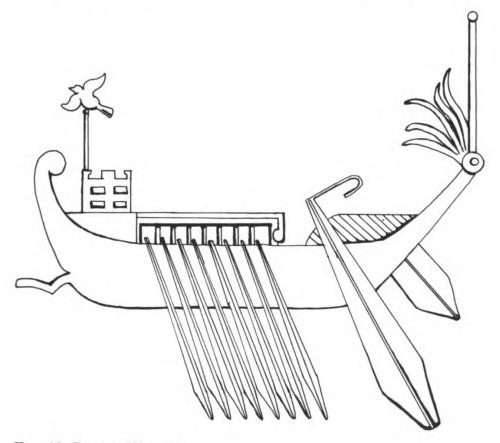


FIG. 10: ROMAN WARSHIP

⁵⁴ Scepter, Crawford 511/4a; thyrsus, Hill (above n. 14), pp. 126 and 18, n. 2; flagstaff, BMCRRSicily 18, Syd. 1348.

⁵⁵ Mithridatic coin, anonymous Italian issue (Syd. 632 reverse). Antony's legionary coin: Crawford 544/1, where again it was called a scepter with a fillet; *BMCRRSicily* 183 and Syd. 1212 a standard; Kent (above, n. 22), p. 275, 112, a banner.

and is probably not a reference to Sextus' dynastic ambitions or personal adherence to the cult of Dionysus. Instead, it is explained by scholars familiar with ancient ships as being a dolon or akatieon mast, shown on ships from the fifth century B.C. to the sixth century A.D. It was used when the normal sail was put away and the ship was ready for action. The fillet is an admiral's pennant.⁵⁶

As briefly mentioned above, scholars identify the lighthouse on the coin as the pharos of Messana, the city where Sextus kept his head-quarters while he controlled Sicily.⁵⁷ M. Reddé has studied the representations of lighthouses in Roman period has divided them into two basic types—those surmounted by a statue and those with no statue. Lighthouses with statues on top are found exclusively in the eastern half of the Empire (the lighthouses of Alexandria, Laodicea, and Constantinople). Those without statues appear to be concentrated in the west (Ostia, Toledo, Bu Ngem, Leptis Magna, Pisae, Libarna, to which can be added Panormus).⁵⁸ Because Reddé was convinced that Sextus' coin was struck in Sicily, he followed a theory put forth by G. Fuchs that the coin shows not a pharos, but a tower to commemorate Sextus' naval victories.⁵⁹

- For representations of an dolon mast, see the Praeneste relief cited by Casson (above, n. 52), figs. 130 and 132. A second relief from Avezzano, now in the Torlonia Museum in Rome, dated to the first century A.D. (Casson, fig. 139) shows an early Imperial example of the mast in use (see also a first century B.C. to first century A.D. relief from Pozzuoli, now in Naples, Casson, fig. 129). For a discussion of the mast, see C. Torr, Ancient Ships, ed. A. Podlecki (Chicago, 1964), pp. 88–89. Casson (pp. 246–47, n. 88) cited Antony's legionary coin as an example of the admiral's pennant tied to the artemon mast, yet the pennant is seen on all representations of the mast.
- ⁶⁷ Crawford 511/4a; Syd. 1348; *BMCRRSicily* 18; Hill (above, n. 14), pp. 126 and 128; Liegle (above, n. 50), p. 212 (mint is in Messana).
- ⁵⁸ M. Reddé, "La représentation des phares à l'époque romaine," *MEFRA* 1979, p. 856, tables pp. 852-53. Eastern lighthouses without statues are found at Lechaeum, Heraclea Pontica, and Berytus. Aegeae, said by M. Price and B. Trell, *Trell, Coins and Their Cities* (London, 1977), p. 40, to show a guard on top, may actually show a statue; the pharos at Abydus has a trumpeter in the top, leaving no room to show the statue, if there was one.
- ⁵⁰ Reddé (above, n. 58), p. 859; G. Fuchs, *Architekturdarstellungen* (Berlin, 1969), p. 34.



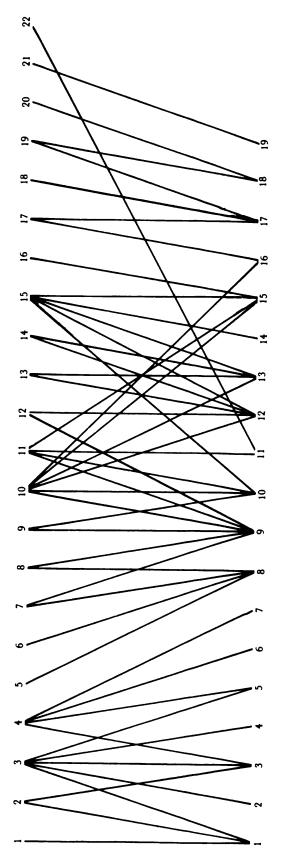
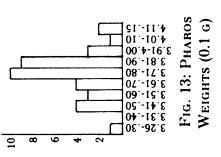


Fig. 11: Pharos Die Links

Rev.	112 19 20.52 0.87
7	
	o D d n
Obv.	n = 114 d = 21 D = 22.98 S ± 0.98

FIG. 12: PHAROS DIE ESTIMATE



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Because the tower is shown with a ship the most natural interpretation is that the tower is a pharos. If we then follow the logic of Reddé's findings that lighthouses with statues on top are only found in the eastern half of the Empire, then perhaps the place of minting has been wrongly located, and the pharos depicted is that of an eastern city. From the historical sources, we know that after his defeat in the Battle of Naulochos, Sextus fled east to Mitylene, a city that had strongly supported Sextus' father as well, in order to rebuild his fleet. Is it possible, then, that this type was struck in Mitylene to be used in paying for the reconstruction of Sextus' warships?

The die linkage chart (Figure 11) shows three discrete groups of obverse and reverse linkages. The groups do not necessarily imply an interruption of minting, as the number of coins compared to the number of surviving dies is relatively low and we may simply be lacking evidence due to the scarcity of the coins. The earliest and latest reverse dies were used with one or two obverse dies; in the middle of the series, reverse dies were paired with four to six obverse dies.

The die study shows that there are 21 obverse dies used with 19 reverse dies. This is somewhat below Crawford's estimate of less than 30 dies for the obverse and less than 33 for reverse. Statistical analysis (see Figure 12) again supports the lower figures, though the estimates indicate that there might be up to 23 obverse and 21 reverse dies (the standard deviation is about plus or minus 1 die).

A metrological study of the coinage showed that the weights of surviving coins vary between 3.30 and 4.15 g (see Figure 13). The average weight is 3.75 grams, again below the typical first century denarius weight of 3.84–3.86 g. The curve is a bell curve with most coins falling between 3.65 and 3.85 g. The flans are small, so that the type does not fit entirely on the coin. Most of the dies axes are on the perpendicular, although all positions occur. In a sample of 120 coins, nine bear banker's marks; two brockages are known.



⁶⁰ See also Thiersch's defense of the function of the tower, based on the model of Alexandria (H. Thiersch, *Pharos* [Teubner, 1909], p. 22).

⁶¹ Crawford 511/4.

THE HOARD EVIDENCE

Compilation of the hoard evidence proved to be of little use in dating Sextus' activity or locating the mint. Generally, the hoards close with Sextus' coins or in the Imperial period. The exceptions are the Carbonara and Plopsor hoards, which close with the coins of Sextus, Nasidius, and Octavian (dated to 36). The hoards fail in helping to locate the mint, as hoards are found scattered throughout Europe (see Figure 14 and Appendix). In fact, most of the reported findspots are in Romania, but this is most likely due to the lack of native coinage, desire for

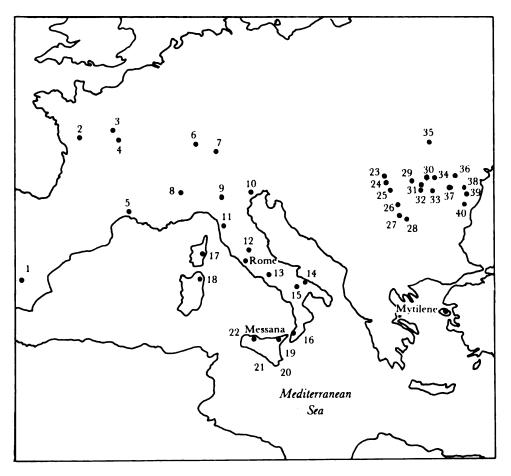


Fig. 14: FIND Spots

silver,62 and thoroughness of publication rather than proximity to place of issue.

Four hoards contained aurei: 2, Ambenay, France; 12, Contigliano, Italy; 20, Sicily; and 30, Augustin, Romania. Neptune denarii (511/2) are found as isolated finds in Switzerland and Germany, and in French, Italian, Sardinian, Sicilian, and Romanian hoards. Denarii of the Pompeius type (511/3) were found as isolated finds and in hoards in Romania as well as in hoards in Spain, France, Italy, Sardinia, and Sicily. The Pharos issue appears as isolated finds and in hoards in Romania as well as in hoards in Spain, Italy, Corsica, Sardinia, and Sicily.

DATE AND LOCATION OF THE MINT

Numismatists assign Sextus' coins to the years 46–36. Now that Buttrey has linked Sextus' Pietas coins to coins of Cnaeus Pompeius, Sextus' first issue can be placed in late 45/early 44, while Sextus was in Spain fighting Julius Caesar. Crawford believes there was a hiatus, and that Sextus began minting again in 42, when he controlled Sicily. Hill, Grueber, and Sydenham all had suggested this date, and all three placed the closing of the mint in 36, before the Battle of Naulochus. Crawford, however, believes that Sextus stopped issuing coins by 40, when his office of prefect was revoked. Yet the date of the revocation of Sextus' title has been argued to have taken place in the spring of 37 (following Cassius Dio 48.54.6, where Sextus was removed from the augurship and designated consulship).

Can a more certain date be posited? We do know that minting can only have begun again after the spring of 43 when the Senate conferred



⁶² See M. Crawford, "Imitations of Roman Republican Denarii in Dacia," SCN 7 (1980), pp. 51–52, "...it is reasonable to talk of the massive import of Roman Republican denarii into Dacia and the lower Danube basin, a phenomenon which I regard as occurring from the middle of the first century B.C. onwards."

⁶³ Buttrey (above, n. 2), pp. 98-99; this is the date given by Grueber (BMCRRSpain, p. 370) and Syd 1041.

⁶⁴ Crawford, p. 521; see also p. 742, "The prolific gold and silver coinage of Sex. Pompeius belongs only to the years 42-40..."; Syd., p. 210; *BMCRRSicily*, p. 560; Hill (above, n. 14), pp. 127-28; Hadas, pp. 120-21.

the title of prefect of the fleet on Sextus. The coins with Scylla or dog-headed skirts on a naval trophy must certainly date after 42, after Sextus' first victory off the Sicilian coast. The ancient sources tell us that Sextus was well supplied with money especially after 42, when the wealth of Sicily passed into his hands. The fact that Sextus changed titles between his Pietas coins (i.e. imperator) and all of the coins discussed in this article (imperator iterum) may provide the terminus post quem of the coins.

Sextus' use of imperator iterum may refer to his victory over Q. Salvidienus Rufus, in the winter of 42.66 A stronger possibility is that Sextus is hailed as imperator for the second time after the Battle of Mylae, since the use of iterum does not change on any of the coins.67 An inscription found in Lilybaeum (now in Palermo) confirms the date of 36 as being the year Sextus adopted the title imperator iterum.68 The inscription reads:

MAG POMPEIO MAG F PIO IMP AVGVRE COS DESIG POR[TA]M ET TVRRES L PLINIVS L F RVFVS LEG PRO PR PR DES F C

The augure shows that the inscription was carved after the Treaty of Misenum in 39, when Sextus was given both an augurate and the rank of designated consul. However, Sextus is not called imperator iterum, which rules out the possibility that he took on the title imperator iterum after his battle with Rufus in 42.69 Crawford maintained that the iterum was accidently dropped by the carver of the inscription, in order to preserve his date of 42 to 40 for the coins.70 Instead, we should see in this inscription evidence that the title imperator iterum could not



⁴⁸ App., BCiv 4.85, 5.25; Cass. Dio 48.17.

⁶⁶ Crawford, p. 521; the use of Magnus has independent confirmation in Cicero's thirteenth Philippic (13.21.50), where he is called "Magnum Pompeium, Gnaei filium" (given March 43).

⁶⁷ As Liegle (above, n. 50), p. 212.

⁶⁸ A. Salinas, *Notizie degli Scavi* (1894), p. 389, 878 C = Dessau, *Inscriptiones latinae selectae*, vol. 3, pt. 2, 8891; also Hadas, p. 100, n. 1 (cited incorrectly).

⁶⁹ As Hadas, p. 140.

⁷⁰ Crawford, p. 521.

appear on the coins before July of 36, the date of the Treaty of Misenum.⁷¹

Thus, Sextus did not begin minting again until 36, after he had been removed from his offices of prefect and augur, although this affects neither the iconography nor the titulature of the coins. The fact that Sextus had no qualms about retaining his title and continuing to coin with it is explained by the fact that the Senate which had revoked his offices would have been controlled by Octavian, and Sextus would have deemed the revocation an illegal move. He also had a large fleet and army to pay, with no funds coming from Rome. The types reflect his preoccupation with his naval victories and his legitimacy as the avenger of his father and brother—Octavian's coinage from the period shows the same themes.

The physical evidence obtained from the die link studies may confirm this hypothesis. Recut dies testify to a need for economy of labor and heavy pressure to coin. The absence of heavy specimens and low average weight of the coins may speak for a need to stretch the supplies of silver. The largest issue, the Pompeius denarii, shows a greatly compacted minting process, with a large number of anvils striking simultaneously. The Neptune denarii may have been minted after the Pompeius series; it is possible that preparations to meet Octavian's fleet, or even the defeat at Naulochus, interrupted the minting of this series.

Although the closing date of 36 in Sextus' minting has not been questioned previously, I would like to bring up the possibility that Sextus' minting life has been cut too short. While Sextus was in Mitylene, he began to raise an army, build a fleet and bribe the opposing army, all of which would require sources of income.⁷² An iconographical analysis has shown that lighthouses with statues on top are confined to the



⁷¹ According to R. Combés, *Imperator* (Paris, 1966), pp. 114–15, imperator was first iterated by Sulla; Pompeius Magnus was first to use the title for the third time. On coins and in written histories, the iteration could be ignored or dropped. However, after 43, senatorial decrees and inscriptions are careful to use iterum once it had been awarded (p. 116).

⁷² App. BCiv 5.138, where Sextus sent a bribe to pay off the cavalry force coming to oppose him, and 5.139, where Appian noted that after the capture of Nicea and Nicomedia, Sextus "obtained large supplies of money."

eastern half of the Empire. I suggest that the pharos shown on 511/4 is not that of Messana, but that of Mitylene, where Sextus spent the spring of 35 and may locate Sextus' mint. There is no reason why Sextus would not have used a type that recalled his greatest victory to encourage the soldiers and sailors still with him. The *dolon* mast with the admiral's pennant may give a final clue, as it is only shown (on earlier and contemporary parallels) on eastern ships.

CONCLUSION

Although Sextus Pompey's coins are generally supposed to have been issued between 43 and September of 36, in Sicily, I would like to suggest that while the Pompeius and Neptune denarii were minted in Sicily, they were minted between the late summer of 36 and September of that year. Although there is no evidence beyond the use of imperator iterum in the inscription of the aurei to pinpoint the date of minting, it is likely that the coins were minted at the same time as the Pompeius and Neptune denarii. The last series minted by Sextus was the Pharos issue, possibly struck in Mitylene in 35.

CATALOGUE

CRAWFORD 511/1, AUREUS

- Obv. Bearded head of Sextus r.; to l. MAG PIVS, to r. IMP ITER; oak wreath border.
- Rev. Heads of Pompeius Magnus and Cn. Pompeius Jr. facing; to l. lituus, to r. tripod; above PRAEF, below CLAS ET ORAE MARIT EX S C: border of dots.

Obv.	Rev.	No. of	Coins
Die	Die	Combi- nation	
1	1	1	a) Vienna 3.390, 8.2, \(\psi\); b) Milan 2163, 8.9;
			c) Berlin, 8.043, ↓; d) Hague 1846, 8.045, ∠;
			e) Hess-Leu, 24 Mar. 1959, 320 = Hirsch



Obv. Rev. No. of
Die Die Combination

Coins

18, 27 May 1907, 487 = Naville 15, 2 July 1930 (Jameson), 11; f) Naville 3, 16 June 1922 (Evans), 44, 8.2; g) Sotheby, 4 May 1908, 29; h) Münz. u. Med. 52, 19–20 June 1975, 240 = Münz. u. Med. 43, 12-13 Nov. 1970, 24 = Münz. u. Med. 15, 1-2 July 1955, 703, 8.17; i) Hess-Leu, 2 Apr. 1958, 276, 7.81; j) Kress 92, 31 Mar. 1952, 376a; k) Münz. u. Med., 19 Mar. 1960, 9 = Hess, 20May 1912, 1251; 1) Bourgey, 24-25 Mar. 1965, 18 = Bourgey, 6-7 Dec. 1961 (Coppens), 623, 7.74; m) Naville 18, 10 Oct. 1938 (Sartiges), 27; n) Santamaria, 24 Jan. 1938, 222; o) Brussels (du Chastel) = Rollin and Feuardent, 27 May 1889, 184, $8.02 \downarrow$; p) Hess, 14 Apr. 1954, 217 = Naville 15, 2July 1930 (Jameson), 488; q) Sotheby, 10 Nov. 1972 (Metropolitan Museum), 5 (banker's marks rev, ♣), 7.85, ८; r) Madrid; s) Hirsch, 10 May 1909 (Weber), 746, 8.5; t) Leu 25, 23 Apr. 1980, 212 = London 13 (Guide, pl. 69, 27); u) Bourgey, 1 Dec. 1966, 10; v) HSA 22219

1 2 2

a) Schulman, 5 Mar. 1923 (Vierordt), 512 = Sotheby, 13 June 1911 (Sandeman), 370; b) Frankfurter, 11–12 Apr. 1960, 114 = G. Hirsch, 26–27 Nov. 1958, 272; c) Vienna 3.391, 7.82, ↓; d) Paris, AF 140; e) Cambridge 1447, 12; f) Münz. u. Med., 8–10 Dec. 1949, 882; g) L. Cesano, "Una nuova 'Restitutio' aurea de Traiano," Bollettino del Circolo numismatico Napoletano (Dec. 1939), 2

Obv. Die	Rev. Die	No. of Combi- nation	Coins
2	3	3	a) Naples F2 3134, 7.58; b) Basel 10, 15 Mar. 1938, 496; c) Morgenthau 348, 9 May 1935, 99 = Naville 17, 3 Oct. 1934, 680, 8.13; d) Münz. u. Med. 13, 17–19 June 1954, 592; e) Hess, 7 Mar. 1935, 34 = Naville 11, 18 June 1925, 174 = Naville 3, 16 June 1922 (Evans), 13, 8.13; f) Adriane Gallery, 9 Dec. 1981, 379 = Santamaria, 4 June 1952 (Signorelli), 733 = Glendining, 20 Feb. 1951, 1580 = Ratto, 24 Feb. 1930, 1331; g) Basel 3, 4 Mar. 1935, 113; h) London 14, 8.29, ←; i) Naville 17, 3 Oct. 1934, 681

CRAWFORD 511/2, NEPTUNE

Obv. Diademed head of Neptune r., trident over shoulder; around flan: MAGPI VS IMPITER, dies 1 (later recut), 7, 9, 10; MAGPI VS IMPITER, dies 2 (later recut to MAG), 5, 11; MAGPIVS IMPITER, die 3 (later recut to MAG); MAGPI VS IMPITER, dies 4, 6, 8 (later recut to IMPITER).

Rev. Trophy with trident, prow and aphlaston, terminating in dog skirts and anchor; around flan, PRAEF CLAS ET ORAE MARIT EX SC (dies 1-6); PRAEF CLAS ET ORAE MARIT EX SC (dies 7–11).

Obv. Die	Rev. Die	No. of Combi- nation	Coins
1	1	1	a) Stacks, 15–16 Mar. 1979 (Sawhill), 563; Peus 31, 10–12 Nov. 1978, 385, 3.79; c) Peus 31, 10–12 Nov. 1978, 384, 3.24; d) Santa- maria, 24–28 Feb. 1958, 654



Obv. Die	Rev. Die	No. of Combi- nation	Coins
1	2	2	a) Berlin, 3.95, 🤨
1	3	3	a) Basel 6, 18 Mar. 1936, 1494 = Ciani, 20 Feb. 1935 (Grandprey), 396; b) Rauch, 11-13 Oct. 1979, 206 = Toderi FPL, May 1969, 191
1r	1	4	a) Leu 17, 3–4 May 1977, 836 = Feuardent Frères, 16 June 1924, 89; b) Berlin, 3.925, ↓
1r	2	5	a) Bourgey, 21 Mar. 1972, 352
1r	3	6	a) Oxford, 3.71, ←
1r	brock		a) Copenhagen, 3.74
2	2	7	a) Naville 11, 18 June 1925, 173; b) Santamaria, 4 June 1952 (Signorelli), 734; c) G. de Falco, Dec. 1967, 134; d) ANS 1937.158.340, 3.94, ≯; e) ANS 1970.156.34, 3.97, ⋋
2	4	8	a) Leu, 28 Apr. 1982, 271, 3.87, ∠; b) Peus, 20–22 Oct. 1981, 328, 3.92; c) Baranowski, 9 Dec. 1929 (Cuzzi), 254; d) Glendining, 14 Jan. 1953, 449; e) Bourgey, 18–19 Apr. 1967, 41 = Ratto, 12 May 1925, 567; f) Vinchon, 4 Feb. 1971, 239; g) Carlo Crippa, 25 Feb. 1972, 324; h) Kress 120, 30 Nov. 1961, 660; i) Schulman, 8–10 June 1966, 1506
2 r	brock		a) Munich, 3.39, †; b) Madrid
2r	5	9	a) Munich, 3.917, →; b) Sternberg, 24 Nov. 1977, 470, 3.87, ↑; c) Vinchon FPL 12, Apr. 1957, 462; d) Kress 93, 17 Nov. 1952, 617 = Cahn 65, 15 Oct. 1929, 397; e) Hess 211, 9 May 1932, 150; f) Paris 2906



Obv. Die	Rev. Die	No. of Combi- nation	Coins
2r	11	10	a) Egger 45, 12 Nov. 1913, 873; b) Münz. u. Med., 7 Sept. 1968, 992
3	3	11	a) Numismatic Fine Arts 9, 10 Dec. 1980, 383 = C.O.I.N., 9 June 1978, 1618; b) Hess, 18 Dec. 1933, 258; c) Hess-Leu, 12–13 Apr. 1962, 412; d) ANS 1941.131.331 = Dupriez, 23 Oct. 1934, 28 = Glendining, 1 Dec. 1927, 38 = Naville 3, 16 June 1922, 42, 3.98, →
3	5	12	a) The Hague 1847, 3.87; b) Vienna 3.388, 3.75, ←; c) Schweizerische Kredigestalt FPL 25, Spring 1978, 150 = Sternberg, 24 Nov. 1977, 469, 3.87, ∠
3r	4	13	a) Auctiones AG, 12-13 June 1979, 475
3r	5	14	a) Leu, 23 Apr. 1980, 213 = Stacks, 14–15 June 1971, 316 = Glendining, 9 Mar 1931, 300 = Hirsch 34, 5 May 1914, 815, 3.81, →; b) Münz. u. Med. FPL, Sept. 1970, 40 = M. Ratto, 4 June 1931, 170 = Naville 15, 2 July 1930, 1318 = Hirsch 34, 5 May 1914, 873; c) Dorotheum, 8–9 June 1956 (Zeno), 2964; d) Münz. u. Med., 19–20 June 1975, 485, 3.9; e) Athena (Munich), 18 Feb. 1983, 332 = Ancient Coins 16, Aug. 1976, 24 = Myers, 5 Dec. 1974, 256 = Myers, 15–16 Mar. 1973, 332; f) Peus, 25–27 May 1981, 749 = Peus, 6–8 May 1980, 388, 3.80
4	5	15	a) Ratto, 24 Feb. 1930 (Martini), 1326; b) Stacks, 3–4 May 1978 (Knobloch), 741
4	6	16	a) Riechmann 20, 18 Sept. 1922 (Bahrfeldt), 319



Obv. Die	Rev. Die	No. of Combi- nation	Coins
4	7	17	a) Seaby, 22 Oct. 1982, 12; b) Superior, 24–26 Sept. 1970, 163 = Knobloch FPL 30, Apr. 1966, 326; c) Vienna 3.386, 3.9, ↓; d) Sotheby, 1–2 Dec. 1976, 426; e) Cambridge 1447 03; f) Sotheby, 4 Nov. 1982, 485; g) Paris, Rothschild 2 (broken)
4	8	18	a) Paris, D'Ailly 14138, 3.68; b) Paris, D'Ailly 14137, 3.9
4	10	19	a) Lempertz 237, 23 Feb. 1926, 875; b) Kunst und Münzen, 1969, 123; c) Cahn 71, 14 Oct. 1931, 1393
5	6	20	a) Oxford, 3.75 ↓; b) Hague KAW 328b, 3.22, ∠; c) Delmonte, 22 Apr. 1933, 117 = Naville 11, 18 June 1925, 172; d) Kress 117, 26 Jan. 1961, 472; e) Platt FPL, 1971, 368; f) Kress 100, 6-7 Feb. 1956, 561; g) Baranowski FPL, 25 Feb. 1931, 1271; h) Münz. u. Med. FPL 454, Apr. 1983, 51, 3.92; i) Hess, 14 Apr. 1954, 218 = Ball 6, 9 Feb. 1932, 933, 4.0
5	7	21	a) Oxford, 3.61, \$\\$\\$;\$ b) Hess 40, 22 May 1935 (Trau), 40; c) BMCRRSicily 16; d) Paris 2908; e) Philadelphia 29–126–849; f) Naples F2 3130, 4.0; g) Vinchon, 15 Nov. 1965, 21; h) Santamaria, 14 Oct. 1949 (Magnaguti 2), 299 = Hess, 18 Dec. 1933, 257; i) Madrid
5	8	22	a) de Nicola FPL, June 1962, 386
6	n.a.		a) Coin Galleries, 11 July 1955, 448 (rev. not illus.)
6	7	23	a) The Hague 1912/216, 3.87, 🤊



Obv. Die	Rev. Die	No. of Combi- nation	Coins
6	8	24	a) Kricheldorf 25, 8-9 May 1972, 147; b) Paris, Armand-Valton 708; c) Baranowski FPL, 9 Dec. 1929 (Cuzzi), 255; d) Grabow 14, 27 July 1939, 699 = Ball FPL 39, April 1937, 1077 = Ball 6, 9 Feb. 1932, 932, 3.5; e) Madrid
6	9	25	a) Myers 7, 19–20 Apr. 1974, 180; b) H. Schulman, 7–9 July 1970, 405; c) Münz. u. Med., 2–3 Dec. 1975, 473 = Santamaria, 25 May 1926, 17; d) HSA 22544 = Sambon and Canessa, 8–9 May 1903 (Maddelena), pl. 7, 18, 3.94, ✓
7	brock		a) Paris, Rothschild 3
7	7	26	a) Antike Münzen 13, 29–30 Apr. 1975, 62 = Leu, 21–22 Oct. 1966 (Niggeler), 963 = Naville 17, 3 Oct. 1934, 1118, 3.94, ∠; b) Rosenberg 72, 11 July 1932, 830 = Hess, 6 Jan. 1926 (Löbbecke), 841
7	8	27	a) Stacks, 20–22 Nov. 1967, 1036; b) Christie's, 2 July 1968 (Oman), 29(b)
7	9	28	a) Berlin, 3.89,←; b) Paris 2909; c) Paris 2907; d) Schulman, 26 Apr. 1976, 5328; e) Naples F2 3132, 3.87
7	10	29	a) Breaza Hoard, SCN 5, pl. 4, 98
8	5	30	a) Cahn FPL 31, 1934, 628
8	11	31	a) Glendining, 1 Mar. 1978, 117; b) Bourgey, 16 May 1933, 45; c) Bourgey, 20 Dec. 1929, 85
8	11r	32	a) Kurpfälzische, 24 May 1983, 169 = Peus, 6–8 May 1980, 387



Obv. Die	Rev. Die	No. of Combi- nation	Coins
8	12	33	a) Helbing 63, 29 Apr. 1931 (Prix), 295; b) Coin Galleries, 20 Nov. 1975, 1420
8	13	34	a) Oxford, 3.74 †; b) Platt, 11 May 1921, 163
8r	11r (second time)	35	a) Leu, 5-6 May 1981, 345 = Glendining, 2 Apr. 1952 (Cantoni), 1903 = Santamaria, 29 Nov. 1920, 172
8r	12	36	a) New York 1969.222.69 = Hamburger, 10 May 1932, 344, 3.76, ↘
9	brock		a) Copenhagen, 3.76
9	8	37	a) Münz. u. Med. FPL, Feb. 1968, 58 = Naville 13, 27 June 1928, 1103; b) Kress 109, 24-25 Oct. 1958, 715; c) Coll. Baldanza (illus. A. Banti, <i>Corpus Nummorum Romanorum</i> 1, S. Pompeius, 3/1)
9	9	38	a) Kricheldorf, 8 May 1967, 181; b) Hague 1849, 3.875, ∠
9	11	39	a) Vienna 3.387, 3.75, ↑
9	12	40	a) Cambridge 1447 01; b) Martinetti Rome, 1907, 1224
9	13	41	a) Münz. u. Med. 19, 5–6 June 1959, 138 = Basel 6, 18 Mar. 1936, 1495 = Basel FPL, Apr. 1934, 391; b) Hersh, 3.88
10	brock		a) Superior, 14-15 Oct. 1971, 877
10	10	42	a) Kunst und Münzen 5, 1970, 117; b) Malter FPL 21, Summer/Fall 1968, 1347
10	11	43	a) BMCRRSicily 17
10	12	44	a) Naples F2 3129, 3.91



Obv. Die	Rev. Die	No. of Combi- nation	Coins
10	13	45	a) Naville 15, 2 July 1930, 1317; b) Munich, 3.912, ↓; c) Peus, 15 Mar. 1954, 1122; d) BMCRRSicily 15 (double struck); e) Berlin, 3.55, ↑; f) Munich, 3.417, ↑; g) Naples F2 3131, 3.81; h) Bourgey, 27 Nov. 1911 (Chabenat), 286; i) Madrid; j) Naples F2 3133, 3.64; k) ANS 1944.100.4555, 3.77, ↗
10	14	46	a) Kress 3, 1959, 487; b) Cambridge 1447 02; c) Brussels (double struck), 3.97, ↗; d) Vienna 3.385, 3.85, ↖; e) Madrid; f) Madrid; g) Leu 17, 3-4 May 1977, 837; h) G. Hirsch, 24-28 Oct. 1966, 852 = Naville 8, 25 June 1924 (Bement), 418 = Hess, 11 Mar. 1912, 988; i) Paris, Rothschild 1
11	15	47	a) Montenapoleone, 19–21 May 1982, 243; b) ANS 1944.100.4556 = Hirsch 22, 25 Nov. 1908, 16, 3.87, ↑; c) Hannover 3285, 3.37, →; d) Madrid

Too Worn for Identification:

2.59		Copenhagen
3.66	1	Oxford
3.6		Helbing, 22 Mar. 1926, 153
3.5		Ball 6, 8 Feb. 1922, 934
		Cambridge 1447 03 (banker's mark rev. 1)

CRAWFORD 511/3, POMPEIUS

Obv. Head of Pompeius Magnus r.; in front a lituus, behind a jug; around flan MAG PIVS IMP ITER.

Rev. Garlanded Neptune stands facing l., r. foot on prow, r. hand holding aphlaston, cloak around l. arm; to either side a young man stepping away with (l.) man or (r.) woman on shoulder; at top of



flan PRAEF, in exergue: CLAS ET ORAE MARIT EX SC, dies 1-9, 13-17, 19-37; ORAE MARIT ET CLAS SC, die 10; ORAE MARIT ET CLAS EX SC, dies 11, 12, 18.

Obv. Die	Rev. Die	No of Combi- nation	Coins
1	n.a.		a) Kricheldorf FPL 35, Mar. 1959, 56 (rev. not illus.)
1	1	1	a) Vinchon 17, 13 Nov. 1967, 290 = Vinchon, 25–27 Apr. 1960, 326; b) Ratto, 8 Feb. 1928, 1608; c) Basel FPL 1, Apr. 1934, 390; d) G. Hirsch, 10–12 Dec. 1957, 7 (banker's mark obv. \(\); e) Naville 3, 16 June 1922 (Evans), 5, 3.92; f) Birkler and Waddell, 9 Dec. 1982, 416
1	3	2	a) Ratto, 1924, 1273; b) ANS 1937.158.341, 3.77, ↑
1	6	3	a) Glendining, 11 Apr. 1973, 300; b) Kölner Münz., 2-3 Nov. 1981, 118 = Knopek, Sept. 1978, 252; c) Oxford, 3.85; d) Cambridge 1447 06 (banker's mark obv. 4); e) Madrid; f) Leu, 23 Apr. 1980, 214 = Kricheldorf 23, 21-22 June 1971, 68
2	2	4	a) Milan 2162, 3.86, \(\psi\); b) The Hague KAW 328a (banker's marks obv. \(\psi\), 3.82, \(\psi\); c) ANS 1947.2.238, 3.89, \(\psi\)
2	6	5	a) Kunst und Münzen 23, 4-6 Feb. 1982, 308; b) Milan 2158; c) Hirsch 34, 5 May 1914, 845 = Sangiorgi, 11 Apr. 1894 (Stettiner), 2; d) Coin Galleries, 28 Mar. 1977, 577 = Coin Galleries, 21 Nov. 1974, 588; e) Münz. u. Med. FPL 144, Mar. 1955, 35; f) Egger 39, 15 Jan. 1912, 592; g) Cahn 75, 30 May 1932, 805; h) Baranowski, 1933, 2230; i) Munich, 3.27, ↑



Obv. Die	Rev. Die	No. of Combi- nation	Coins
2	7	6	a) Münz Zentrum 36, 7-9 Nov. 1979 (Meyer), 345 = Leu, 30 Apr. 1975, 361, 3.90, →; b) Knopek, Sept. 1978, 251, 3.87,
2r	1	7	a) Münz. u. Med., FPL 245, July 1964, 20;b) ANS photo file, no dealer, 218;c) Berlin, 3.995;d) Naples F2 3124, 3.74
2r	2	8	a) Oxford, 3.56, ✓
2r	3	9	a) Coin Galleries, 20 Nov. 1975, 1421; Münz. u. Med., 19-20 June 1975, 483 = Münz. u. Med., 19-20 June 1964, 249 = Santamaria, 4 May 1961, 5; c) Basel, 15 Mar. 1938, 497; d) Superior 14-15 Oct. 1971, 594 = Santamaria, 4 June 1952 (Signorelli), A.732, 3.95; e) Vienna 3.392, 3.7, →; f) Oxford (pierced), 3.52, →; g) Berlin, 3.91, →; h) Paris
2 r	6	10	a) Leu 10, 29 May 1974, 11 = Hess-Leu, 27-28 Apr. 1971, 318 = Münz. u. Med. FPL 19, 5-6 June 1959, 137 = Grunthal 5, 1 June 1948, 243 = Cahn 75, 30 May 1932, 804, 3.88, 5
2r	7	11	a) Münz. u. Med. FPL, 1969, 42; b) Stacks, 19–20 June 1969 (Fowler), 329
2r	3	12	a) Glendining, 4 July 1974, 63
(recut	second t	ime)	
2 r	11	13	a) Paris
(recut	second t	ime)	
3	1?		a) Delano FPL 25, Spring 1975, 81
3	3	14	a) Paris, Armand-Valton 709



Obv. Die	Rev. Die	No. of Combi- nation	Coins
3	13	15	a) Egger 43, 1913, 6; b) Malter, 6-7 Dec. 1971, 366; c) Ciani, 1 June 1920, 302
4	3	16	a) Milan 2157 (Este countermark), 3.65, 🗷
4	4	17	a) The Hague 1967/160, 3.85, †; b) Schulman, 31 May 1938, 213
4	6	18	a) Kurpfälische, 23 Dec. 1982, 74; b) Bourgey, 29 May 1911 (Rous), 422; c) Hess, 6 Jan. 1926 (Löbbecke), 822
4	7	19	a) Münz. u. Med., 22-23 June 1951, 6; b) Glendining, 14 Jan. 1953, 447
4	8	20	a) Malloy FPL 21, FebMar. 1971, 66 = Ball 6, 9 Feb. 1932, 911, 3.3; b) Hess (Lucern), 29 June 1978, 268; c) Stacks, 14-15 June 1971, 296; d) ANS 1941.131.332, 3.86, ←
5	1	21	a) Oxford (banker's mark obv.)), 3.65, ←; b) Münz Zentrum, 23 Nov. 1978, 762 = Kress 133, 1965, 575; c) Münz. u. Med., Jan. 1980, 394; d) Cambridge 1447 05; e) Naples F2 3121, 3.78; f) Copenhagen, 3.82; g) Auctiones AG, 12–13 June 1979, 474; h) Münz Zentrum, 10 Nov. 1982, 490
5	5	22	a) Myers, 15-16 March 1973, 59
5	6	23	a) Glendining, 4-5 Oct. 1972, 196; b) BMCRRSicily 10; c) Bourgey, 17-18 June 1974, 107, 3.69; d) Sotheby 3, 17 Nov. 1976, 55
5	7	24	a) Kress 137, 1966, 527 (banker's mark rev. $\{0\}$; b) Myers 1971, 448 = Stacks, 14–15 June 1971, 294; c) H. Schulman, 28 Feb. 1959, 2784; d) Madrid; e) Myers, 5 Dec. 1974, 248; f) Schulman, 20–22 Sept. 1973, 549

Obv. Die	Rev. Die	No. of Combi- nation	Coins
5	8	25	a) NCirc 80 (1972), 3891
5	21	26	a) Madrid
6	6	27	a) Baranowski FPL, 9 Dec. 1929 (Cuzzi), 257; b) Münz. u. Med., 2–4 Dec. 1957, 316
6	10	28	a) BMCRRSicily 12; b) Berlin, 3.73, \(\scripts\); c) Vienna 3.395, 3.15, \(\scripts\); d) Cambridge 1447 07; e) Paris 2902; f) Madrid; g) Madrid
6	11	29	a) Madrid
6	12	30	a) BMCRRSicily, 11; b) Madrid
6	18	31	a) Naville 17, 3 Oct. 1934, 1091, 3.97
7	7	32	a) Madrid
7	15	33	a) Auctiones AG, 2-3 Dec. 1975, 472; b) H. Schulman, 6-7 May 1963, 288; c) Münz. u. Med., 16-17 June 1962, 7 = Santamaria, 25 May 1926, A.5, 3.79; d) Naples F2 3125, 3.41
7	17	34	a) Merzbacher, 15 Nov, 1910, 1266
7	28	35	a) Bowers and Ruddy, 9 June 1980 (Ariagno), 290, 3.89
7	29	36	a) Superior, 17-23 June 1974, 890
7	33	37	a) Kress 95, 30 Nov. 1953, (banker's mark obv. Γ)
8	5	38	a) Kress 138, 17 Apr. 1967, 891
8	9	39	a) Kastner, 30 Nov. 1976, 197, 3.91, ↑
8	14	40	a) Myers, 6 Dec. 1973, 342; b) Madrid
8	19	41	a) Glendining, 5 Mar. 1970, 199 = Hess- Leu 28, 5-6 May 1965, 356 = Helbing, 20 June 1929, 3718 = Ratto, 12 May 1925, 519; b) Glendining, 1 Dec. 1927, 23; c) Hess, 6 Jan. 1926 (Löbbecke), 821

Obv. Die	Rev. Die	No. of Combi- nation	Coins
8	23	42	a) Kress, 3 Oct. 1972, 590
8	24	43	a) Princeton, 3.87, ↑; b) Giessener, 25–26 May 1982, 394; c) FPL 10 Vecchi FPL 10, 1973, 73; d) Frey, 24–25 Sept. 1954, 660; e) Spink, 13–16 Feb. 1977, 459, 3.65; f) Numismatic Fine Arts 6, 27–28 Mar. 1979, 555; g) Kress 102, 6–8 Dec. 1956, 190 = Rosenberg, Mar. 1914, 399; h) Kress 45, 453
8	30	44	a) Vienna 3.396, 3.7, ∠; b) G. Nascia, Oct. 1963, 121
8	33	45	a) Myers 7, 19-20 Apr. 1974, 164
9	brock		a) Birkler & Waddell, 11 Dec. 1980, 275; Oxford, 3.91; c) Vienna 38.347, 3.85, ↑
9	5	46	a) Cambridge 1447 04; b) ANS 1896.7.119, 3.41, ∠
9	7	47	a) G. Hirsch, 26 Apr. 1954, 51 = Dupriez, 23 Oct. 1934, 89
9	9	48	a) Bourgey, 18-19 Apr. 1967, 40
9	11	49	a) Berliner Münz Cabinet, 1 Dec. 1978, 121
9	19	50	a) Cahn FPL 24, Nov. 1912, 1195; b) Superior, 10–12 Feb. 1975, 2067 = Knoblock, Apr. 1969, 251; c) Kress 118, 22 June 1961, 683
9	23	51	a) Coin Galleries, 14 Feb. 1973, 59
9	24	52	a) Frey, 15 July 1959, 870
9	25	53	a) Sotheby, 20 June 1979, 175
9	29	54	a) Mazzini Coll. 17 (illus. in A. Banti, <i>Corpus Nummorum Romanorum</i> 1, S. Pompeius, 21), 3.90

Obv. Die	Rev. Die	No. of Combi- nation	Coins
9	31	55	a) Münz. u. Med., 6–7 Dec. 1978 (Voirol), 277 = Basel 3, 4 Mar. 1935, 112, 4.03
10	8	56	a) M. Ratto, 4 June 1931, 163
10	14	57	a) Hersh, 3.94
10	15	58	a) Peus, 6–8 May 1980, 390; b) Berlin, 3.61,
10 10	20 23	59 60	a) Florange, 28 May 1924, 35a) Schulman, 8–10 June 1966, 1483
10	24?		a) Glendining, 6-7 Dec. 1978, 96
10	28	61	a) C.O.I.N., 9 June 1978, 1619 = Sotheby, 1-2 Dec. 1976, 427; b) Bourgey, 18 Dec. 1912, 46; c) Hess (Lucern), 8-9 Mar. 1983, 314; d) Sotheby, 4 Nov. 1982, 486
10?	35		a) Malloy, 28 Mar. 1973, 382
10	36	62	a) Vinchon FPL 12, Apr. 1957, 460
11	5	63	a) Hersh = Hess, 15 Dec. 1933, 235, 3.86
11	18	64	a) Hirsch 18, 27 May 1907, 474
11	22	65	a) Münz. u. Med. FPL 184, Oct. 1958, 49
11	24	66	a) Naville 17, 10 Oct. 1938, 6 = Sartiges Collection, 14
11	25	67	a) Coin Galleries, 12 Mar. 1970, 182, 3.74
11	30	68	a) Hess 207, 1 Dec. 1931, 899
11	31	69	a) Helbing FPL 18, 580
12	9	70	a) Milan 2161, 3.87, 🖫
12	27	71	a) Copenhagen, 3.80
12	37	72	 a) Oxford, 3.66, ≯; b) Milan 2159, 3.61, ≯; c) Glendining, 26 May 1982, 80 = Cahn 47,



Obv. Die	Rev. Die	No. of Combi- nation	Coins
			17 May 1922, 94; d) Coin Galleries, 7 Aug. 1985, 232 = G. de Falco FPL 71, Dec. 1965, 139; e) Kricheldorf 29, Mar. 1975, 282 = Peus 270, 10-12 June 1969, 161, 3.82
13	13	73	a) Kress, 31 Mar. 1952, 378; b) Helbing 63, 29 Apr. 1931 (Prix), 274; c) ANS 1944.100.4559, 3.91, \nearrow ; d) Sternberg, 24 Nov. 1977, 471, 3.91, \uparrow ; e) Paris 2898; f) Naples F2 3123, 3.94; g) G. Hirsch, 29–31 Mar. 1955, 447 = Cahn 61, 14 Oct. 1931, 1394; h) Madrid (banker's marks obv. \blacksquare)
13	17	74	a) Swiss Bank 2, 27 Oct. 1977, 424; b) Naville 15, 2 July 1930, 1300 = Hirsch 34, 5 May 1914, 846; c) Edward Gans, 9 Mar. 1954, 391; d) M. Ratto, 19 Jan. 1956, 1
13	19	75	a) de Nicola FPL, Sept. 1962, 302
13	20	76	a) Coin Galleries FPL 2, 1966, B159
13	23	77	a) Ratto, 24 Feb. 1930 (Martini), 1243
13	24	78	a) Brussels, 3.34
13	2 6	79	a) Kress 100, 6-7 Feb. 1956, 564
13	27	80	a) Sotheby, 8 Dec. 1981, 265, 3.65
13	29	81	a) Malloy FPL 38, Sept. 1975, 43
13	31	82	a) Glendining, 17 Sept. 1980, 32 = Spink FPL 5, 1974, 4201 = Bourgey, 21 Mar. 1972, 593; b) Hess-Leu, 16 Apr. 1957, 332, 3.13; c) Münz. u. Med., 17–19 June 1954, 593; d) Stacks, 20–22 Nov. 1967, 1009; e) BMCRRSicily 1; f) Kress 130, 1934, 663
14	16	83	a) Stacks, 3-4 May 1978 (Knobloch), 739 = Stacks, 20 Jan. 1938 (Faelton), 1421; b)



Obv. Die	Rev. Die	No. of Combi- nation	Coins
			Mazzini Coll. 17 (illus. A. Banti, <i>Corpus Nummorum Romanorum</i> 1, S. Pompeius 18/9), 3.86; c) Glendining, 11–12 Dec. 1975, 180; d) Schulman, 14 May 1975, 1256; e) Peus. 6–8 May 1980, 389 = Giessener, 28–29 June 1979, 210 = Kunst und Münzen 19, 15–17 Mar. 1979, 176 = Kunst und Münzen 5, 1970, 116; f) HSA 24888 = Maddelena, 1903, 2, 3.93, ≯; g) Madrid
14?	17		a) Brussels, 3.82, ↑
14	22	84	a) Hess-Leu, 12–13 Apr. 1969, 411; b) Cahn, 26 Nov. 1930, 129; c) Baranowski FPL, 9 Dec. 1929 (Cuzzi), 1004a
14	26	85	a) Peus, 25–27 May 1981, 750; b) Stacks, 4–7 May 1960 (Neumoyer), 266
14	29	86	a) Madrid (banker's mark obv. ●); b) Madrid
14	32	87	a) Ball FPL 6, 9 Feb, 1932, 913; b) Kress, 21 Mar. 1972, 611
14	36	88	a) Dorotheum, 8-9 June 1956 (Zeno), 2962 (banker's mark obv.)
15	20	89	a) Hirsch, 24-28 Oct. 1966, 837; b) Cambridge 1447 09
15?	2 5		a) Philadelphia 29–126–848, 3.695, ↑
15	29	90	a) Helbing FPL 18, 582; b) Coin Galleries FPL 2, 1962, B305; c) Kimpel 25, Mar. 1970, 476
15	31	91	a) Madrid; b) Birkler and Waddell, 10 Dec. 1981, 253
15	34	92	a) Bourgey, 4-5 May 1972, 64

Obv. Die	Rev. Die	No. of Combi- nation	Coins
16	16	93	a) Ball FPL 6, 9 Feb. 1932, 912; b) Vinchon, 6–7 May 1959, 153, 3.7; c) Giessener, 25–26 Apr. 1982, 393 = Peus, 20–22 Oct. 1981, 329, 3.97; d) Kress 120, 30 Nov. 1961, 662; e) Santamaria, 24–28 Feb. 1958, 651; f) M. Ratto, 19 Jan. 1956, 1; g) Paris, D'Ailly 14145, 3.7
16	21	94	a) Madrid
17	16	95	a) Madrid (banker's mark obv. ())
17	19	96	a) Malloy 5, 15 Mar. 1975, 650; b) Stacks, 14-15 June 1971, 296; c) ANS 1937.158.342, 3.90,
17	20	97	a) Münz. u. Med. 25, 17 Nov. 1962, 52
17	21	98	a) The Hague, VR 5508 = Sotheby, Dec. 1924, 22, 3.94, ↗
17	23	99	a) Hirsch 33, 17 Nov. 1913, 1058; b) London 1911 7-5-1, 3.71, ↓; c) Cahn 71, 27 Feb. 1918, 3; d) Ratto 1, 1969, 239; e) Kress 109, 24-25 Oct. 1958, 718; f) Kress 103, 4-6 Feb. 1957, 23; g) Coin Galleries, 21 July 1982, 60; h) Bourgey, 4 Nov. 1913, 667
17	24	100	a) Malloy FPL 36, Oct. 1974, 52 = Nascia FPL 10, Oct. 1965, 99 = Nascia FPL 5, May 1965, 350; b) Naville 15, 2 July 1930, 1301 = Naville 3, 16 June 1922 (Evans), 6, 4.0; c) Münz u. Med. FPL 378, May 1976, 11; d) H. Schulman, 6–8 Nov. 1970 (H. D. Gibbs), 245; e) Glendining, 27 Sept. 1961, 230 = Hess, 18 Dec. 1933, 234; f) Hersh, 3.55
17	28	101	a) Leu, 9 May 1973, 313, 3.93



Obv. Die	Rev. Die	No. of Combi- nation	Coins
17	32	102	a) ANS 1944.100.4558, 3.89, <
17	32r	103	a) Vienna 3.393, 3.75, ✓
18	brock		a) Oxford, 3.48
18?	19		a) Kress, 2 Apr. 1973, 532
18	23	104	a) Kress 93, 17 Nov. 1952, 618; b) Coin Galleries, 24 May 1972, 176; c) Glendining, 11 Mar. 1969, 44 = D. J. Crowther 2, 1969, R47; d) Hess, 11 Mar. 1912, 991; e) G. de Falco FPL 65, June 1964, 239; f) Sternberg, 29–30 Nov. 1974, 6 = Sotheby, 19 Feb. 1969, 2, 3.85; g) Sternberg, 24 Nov. 1977, 472 = Naville 15, 2 July 1930, 1299
18	24	105	a) Auctiones AG 11, 30 Sept1 Oct. 1980, 379; b) Kress 145, 4 Nov. 1968, 480; c) Kimpel, 3-6 Dec. 1971, 16; d) Leu 17, 3-4 May 1977, 838; e) Münz u. Med. FPL 272, Jan. 1967, 48; f) Riechmann 20, 18 Sept. 1922 (Bahrfeldt), 320; g) Kress 138, 17 Apr. 1967, 890
18	25	106	a) Schweizerische Kredigestalt 13, 1974, 113 = Vecchi Schwer, 13 May 1983, 137
18	33	107	a) Münz. u. Med. FPL, Feb. 1968, 57 = Cahn 61, 4 Dec. 1928, 567; b) Vienna 3.394, 3.8, →
18	36	108	a) Christie's, 4 Dec. 1981, 20 (banker's marks obv. Rf; b) G. Hirsch, 28-30 May 1962, 304; c) Cambridge 1447 08
19	brock		a) Basel 6, 18 Mar. 1936, 1493; b) The Hague 1845 (banker's mark obv.), 3.46; c) Kress 93, 17 Nov. 1952, 619

Obv. Die	Rev. Die	No. of Combi- nation	Coins
19	19	109	a) Malter FPL, Fall 1969, S1344
19	23	110	a) Kress 93, 17 Nov. 1952, 620
19	24	111	a) Berlin, 3.84, \(\); b) Oxford, 3.18, \(\); c) Peus, 15–17 Mar. 1978, 535, 3.7; d) Schulman, 28–30 May 1973, 1323 = Münz. u. Med., 12–13 Nov. 1970, 239 = Leu, 21–22 Oct. 1966 (Niggeler), 962, 3.85; e) Naville 11, 18 June 1925, 148; f) Ciani, 20 Feb. 1935 (Grandprey), 388; g) Toderi FPL, Sept. 1969, 149; h) Zara Hoard; i) Hannover 3284, 3.87 \(\); j) Numismatic Fine Arts 10, 17–18 Sept. 1981, 299 = Antike Münzen, 25–26 Nov. 1980, 245, 3.72; k) Kress 94, 18 May 1953, 539
19	27	112	a) Coin Galleries, 17 Aug. 1956, 1430
19	30	113	a) Private coll. (illus. A. Banti, <i>Corpus Nummorum Romanorum</i> 1, S. Pompeius 22/3)
19	32r	114	a) Gibbons FPL 7, Summer 1975, 103 (banker's mark obv. ^{\$\xi\$}); b) Tietjen, 19-20 Nov. 1979, 139
19	34	115	a) Cahn 54, 9 Sept. 1925, 2; b) Basel 6, 18 Mar. 1936, 1492; c) Schweizerische Kredigestalt FPL 25, 151, 3.80; d) Milan 2160, 3.84, ✓
19	35	116	a) Brussels, 3.67 ←; b) ANS 1944.100.4557, 3.74, →; c) Peus, 15–17 Mar. 1978, 534 = Salton-Schlessinger, 28 Feb. 1955, 218, 3.75
19	37	117	a) ANS 1922.202.2, 3.74, ↑
20	25	118	a) Superior, 15–18 June 1972, 369; b) BMCRRSicily 9



Obv. Die	Rev. Die	No. of Combi- nation	Coins
20	29	119	a) Naville 11, 18 June 1925, 147
20	29r	120	a) Coin Galleries FPL 3, 1967, C104; b) Montenapoleone, 19–21 May 1982, 242
20	31	121	a) McSorley, no date, 163
20	32	122	a) Bourgey, 23-25 Feb. 1970, 58
20	36	123	a) Naville 15, 2 July 130 (Jameson), 11 = Hess, 14 Apr. 1954, 216
21	brock		a) The Hague 1956/541, 3.60; b) Madrid; c) Paris, Armand-Valton 710
21?	24		a) Copenhagen, 3.86
21	29	124	a) Oxford, 3.72, →
21	30	125	a) The Hague 1912/217, 3.84
21?	32		a) Münz. u. Med., 24–26 Oct. 1974, 236
21	35		a) Sotheby, 18 July 1979, 111; b) G. de Falco FPL 65, June 1964, 279
21	36		a) G. Hirsch, 9–10 Dec. 1965, 1741; b) Madrid
21	37	126	a) Oxford, 3.69, †; b) Myers, 11-12 May 1972, 237 = Glendining, 19 Mar. 1974, 367; c) Madrid; d) G. Hirsch, 1964, 214
22	brock		a) Naville 11, 18 June 1925, 149
22	2 5	127	a) Hannover 3284a, 3.69, 🖫
22	29	128	a) Cahn 60, 2 July 1928, 1839; b) Stacks, 6-7 Sept. 1973, 681 = Superior, 24-26 Sept. 1970, 159; c) Madrid (banker's mark obv. C).
22	30	129	a) Madrid
22	32	130	a) G. de Falco FPL 65, June 1964, 240; b) Egger 41, 18 Nov. 1912, 1087



Obv. Die	Rev. Die	No. of Combi- nation	Coins
22	35	131	a) Münz. u. Med. FPL 203, Sept. 1960, 42
22	36	132	a) Coin Galleries, 9 Mar. 1956, 1736; b) Gallerie des Monnaies 21, Mar. 1972, 185 = Peus, Feb. 1970, 97 = L. Hamburger, 10 May 1932, 311; c) Malloy FPL 33, 1973/4, 34; d) Platt FPL, 1970, 316
22	37	133	a) Baldanza Coll. (illus. A. Banti, <i>Corpus Nummorum Romanorum</i> 1, S. Pompeius 23/1)
23	27	134	a) Berlin, 3.81, ∠
23	33	135	a) Oxford, 3.81, ↓; b) Munich, 3.187, ↓; c) Brussels, 3.79, ∠; d) Berlin, 3.85, ↑
23	36	136	a) Lanz Graz, 1 Dec. 1975, 405; b) BMCRRSicily 8
24	n.a.		a) Münz. u. Med. FPL, Apr. 1949, 82 (rev. not illus.)
24	35	137	a) Hirsch, 26 Apr. 1954, 50 = Ratto, 9 Oct. 1934, 349; b) Helbing FPL 18, 581; c) Sternberg, 30 Nov. 1973, 14 = Hamburger 96, 25 Oct. 1932, 487, 3.90
25	37	138	a) Copenhagen, 3.76
Uncert	ain Dies:		
		3.74	ANS 1948.19.274 \rightarrow (banker's marks obv. ((\sim)
		3.80	Hess-Leu, 12-13 Apr. 1969, 58
		3.96	Antike Münzen, 18–19 Nov. 1982, 509; Madrid (banker's mark obv. 🗥)

CRAWFORD 511/4, PHAROS

Obv. Ship with standard and trident below pharos surmounted by statue; around flan MAG PIVS IMP ITER



Rev. Sylla brandishes rudder l.; around flan: PRAEF ORAE MARIT ET CLAS SC, die 1; PRAEF ORAE MARIT ET CLAS SC, dies 2, 5; PRAEF ORAE MARIT ET CLAS SC, die 3; PRAEF ORAE MARIT ET CLAS EX SC, die 4; PRAEF CLAS ET ORAE MARIT SC, die 6; PRAEF CLAS ET ORAE MARIT EX SC, dies 7–19.

Obv. Die	Rev. Die	No. of Combi- nation	Coins
1	1	1	a) Münz. u. Med., 19–20 June 1975, 486 = Münz. u. Med., 6–7 Dec. 1968, 278 = Hamburger, 10 May 1932, 345 = Hess, 20 May 1912, 1250 = Martinetti Rome, 1907?, 1225, 4.12
2	1	2	a) Maddelena Paris, 1903, 17
2	3	3	a) Münz. u. Med., 17–19 June 1954, 594
3	1	4	a) G. Nascia 20, 1979, 6; b) Bonham, 23–24 Sept. 1980, 197; c) Hersh, 3.85; d) BMCRRSicily 20; e) Vienna 38.348, 3.88,
3	2	5	a) Hersh = Naville 8, 25 June 1924 (Bement), 419, 3.95; b) Berlin, 3.89, ∠; c) Paris 2911bis; d) Naples F2 3126, 4.01; e) Cambridge 1447 11; f) Leu 17, 3-4 May 1977, 841
3	3	6	a) Paris, D'Ailly 14139, 3.94
3	4	7	a) Münz. u. Med., 2–4 Dec. 1957, 317
3	5	8	a) Ratto, 24 Feb. 1930 (Martini), 1330
4	3	9	a) J. Schulman, 5 Mar. 1923 (Vierord), 510
4	5	10	a) C. Crippa FPL, JanMar. 1972, 412; b) Helbing, June 1969, 4087
4	6	11	a) Oxford, 3.75, ↓; b) Berlin, 3.74, ↑; c) Kress 99, 8–9 Dec. 1955, 320 = Kress 94, 18



Obv. Die	Rev. Die	No. of Combi- nation	Coins
			May 1953, 538; d) Ratto, 12 May 1925, 569 = Naville 3, 16 June 1922 (Evans), 43
4	7	12	a) ANS 1944.100.4560; b) Münz. u. Med. FPL 306, Nov. 1969, 43
5	8	13	a) Myers 7, 19–20 Apr. 1974, 181 (banker's mark obv. NIC)
6	8	14	a) Berlin, 3.835, \(\sigma\); b) de Nicola FPL, Dec. 1959, 459; c) Helbing FPL 18, 579; d) HSA 24921 (banker's mark obv. \(\frac{1}{2} \)), \(\rightarrow\); e) Princeton, 3.81, \(\rightarrow\)
7	8	15	a) Madrid
7	9	16	a) Hersh (banker's mark obv.), 3.83; b) Munich = Hess, 6 Jan. 1926 (Löbbecke), 842, 3.51, ↘; c) Rosenberg 69, 2 Dec. 1930, 2416
8	brock		a) The Hague, 3.665
8	8	17	a) Cahn 61, 4 Dec. 1928, 606
8	9	18	 a) Münz u. Med. FPL 257, Sept. 1965, 28; b) Malter, 6-7 Dec. 1971, 369; c) Oxford, 3.46, ←
9	9	19	a) Coin Galleries, 20 Nov. 1975, 1422
9	10	20	a) Naples F2 3128, 3.79; b) Paris, D'Ailly 14140, 3.66; c) Leu, 23 Apr. 1980, 215 = Hess, 11 Mar. 1912, 989; d) Bourgey, 3 Dec. 1928, 224
10	9	21	a) Sotheby, 4 Nov. 1982, 487; b) The Hague KAW 329, 3.76, ∠; c) The Hague KAW 330, 3.68, ∠
10	10	22	a) Oxford = Santamaria, 25 May 1926, 18, 3.82, ↑

Obv. Die	Rev. Die	No. of Combi- nation	Coins
10	12	23	a) ANS 1941.131.333 = $NCirc$ 28 (1920), 86602 \uparrow
10	13	24	a) Lanz Graz, 1 Dec. 1975, 406; b) ANS 1969.222.70, 3.66, \checkmark ; c) Malloy FPL 28, July 1972, 40; d) Kress 138, 17 Apr. 1967, 889
10	15	25	a) Glendining, 8 Oct. 1975, 352
10	16?		a) Dorotheum 410, 1981, 123 (banker's mark obv. R).
11	9	26	a) ANS 1937.158.343 = Hamburger, 19 Oct. 1925, 410; b) Malloy, 28 Feb. 1972, 184 = Knobloch FPL 31, Oct. 1967, 376 = Seaby FPL 578, SeptOct. 1966, A690; c) Cahn 66, 9 May 1930, 558; d) Vienna 3.383, 3.8, \(\daggerapsilon\); e) Raymond, 20 Sept. 1937, 333
11	10	27	a) Madrid
11	11	28	a) Superior, 17-23 June 1974, 905; b) Bourgey, 21 Mar. 1972, 353 = Ratto, 24 Feb. 1930 (Martini), 1328; c) Peus 23, July 1971, 104 = Peus 18, Oct. 1970, 84 = Peus 13, Feb. 1970, 98; d) Munich, 3.798, \(\psi\$; e) Naples F2 3127, 3.85
11	15	29	a) G. Nascia 6, 7–9 June 1971 (Lugano), 8
12	brock		a)Vienna 3.384, 4.15
12	9	30	a) Seaby FPL, Dec. 1965, A.963
12	12	31	a) Baranowski, 25 Feb. 1931. 1272; b) Kunst und Münzen 5, 1970, 118; c) Kress 118, 1961, 342
13	12	32	a) Santamaria, 4 June 1952 (Signorelli), 735
13	13	33	a) Hersh, 3.81



Obv. Die	Rev. Die	No. of Combi- nation	Coins
14	12	34	a) Münz Zentrum, 3 Nov. 1976, 120; b) Glendining 3, 3 Jan. 1978, 115; c) Madrid
14	13	35	a) Kress 3, 1959, 488 (banker's mark obv. ?); b) Münz Zentrum, 10 Nov. 1982, 491 (banker's mark obv. O); c) Stacks, 3-4 May 1978 (Knoblock), 742
15	10	36	a) Baranowski FPL, 9 Dec. 1929 (Cuzzi),1003a; b) Hamburger 96, 25 Oct. 1932, 506;c) Ratto, 24 Feb. 1930 (Martini), 1329
15	12	37	a) Ball 6, 2 Sept. 1932, 935; b) Malter FPL 25, 1970, RR85; c) Schulman, 31 May 1938, 227
15	13	38	a) BMCRRSicily 19; b) Cambridge 1447 10
15	14	39	a) BMCRRSicily 18; b) Copenhagen 1348, 3.99; c) Kunst und Münzen 3, 1969, 204
15	15	40	a) Coin Galleries FPL, vol. 5, no. 5, 1964, 198; b) Ratto, 23 Jan. 1924 (Riche), 1348
16	15	41	a) Hannover 3286, 3.79, †; b) Paris 2910; c) Kress 130, 30 June 1964, 662; d) Platt, 1969, 260 = Basel 6, 18 Mar. 1936, 1496 = Ciani, 20 Febr. 1935 (Grandprey), 397 = Bourgey, 20 Dec. 1929, 86
17	16	42	a) Vienna 3.381, 3.3, \(\sigma\); b) Madrid (banker's marks obv. \(\mathcal{Z}t\))
17	17	43	a) Munich, 3.413, ↓; b) Vienna 3.380, 3.75, ∠; c) Leu, 21–22 Oct. 1966 (Niggeler), 964, 3.49
18	17	44	a) Bourgey, 25–26 Mar. 1974, 124
19	17	45	a) Kress 154, 21 Mar. 1972, 610; b) Vienna 3.382, 3.8, ∠; c) Paris 2911



Obv. Die	Rev. Die	No. of Combi- nation	Coins
19	18	46	a) Schulman, 6-10 June 1966, 1507 = Naville 17, 3 Oct. 1934, 1119, 3.74; b) Copenhagen 1358, 3.6; c) Munich, 3.42, ↓
20	18	47	a) Sotheby, 1-2 Dec. 1976, 429
21	19	48	a) Kress 109, 24-25 Oct. 1958, 716; b) Glendining, 24-25 Apr. 1974, 208; c) Crippa 2, 1971, 206
22?	11		a) Malloy FPL 43, Nov. 1978, 50
Uncert	ain Dies:		
		3.51	The Hague 1851 (banker's mark obv. ¬S), ¬ Dorotheum, 8-9 June 1956 (Zeno), 78 (banker's mark obv. ^)

APPENDIX

Find Spot	Туре	No. of Coins Found	Latest Coin	Ref.
Spain				
1. Albacete	511/3 511/4	1 of 62 1 of 62	2 B.C.	Villaronga.
France				
 Ambenay Bourgueil Maillé 	511/1 511/2 511/3 511/4 511/2 511/3	1 of 294 1 of 689 1 of 689 2 of 689 1 of 422 4 of 422	10 A.D. RIC ² , p. 51, 151 RIC ² , p. 47, 86	Giard. Crawford, p. 667; RRCH 493. Crawford, p. 667; RRCH 488.
5. Beauvoisin	511/3	uncertain of 192	ca. 28 B.C.?	BMCRRSicily, pp. 6–7.
Germany				
6. Maulbronn	511/2	1	isolated find	FMRD 2.4, 4560.



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Find Spot	Type	No. of Coins Found	Latest Coin	Ref.
Switzerland				
7. Arbon	511/2	1	isolated find	Overbeck, p. 94, 37.
Italy				
8. Aosta (Allein)	511/3	1 of 165	<i>RIC</i> ¹ , p. 60, 35, 38	Orlandoni.
9. Betriacum	511/4	1 of 7	Crawford 511	RRCH 434.
10. Aqueilia	511/2	2 of 559	<i>RIC</i> ² , p.	Crawford, p. 667;
	511/3	2 of 559	55, 205	RRCH 522.
11. Vicopisano	not	1 of 154	Augustan	Minto.
	known			
12. Contigliano	511/1	1 of 643	Crawford 511	RRCH 432.
	511/4	2 of 643		
13. Alvignano	511/3	2 of 2317	Crawford 511	RRCH 417.
14. Carbonara	511/2	uncertain	Crawford 511	BMCRR 1, pp. 562-63.
	511/4	uncertain	or 540	
15. Apulia	511/4	uncertain	Crawford 511	RRCH 438
40 4 .	E4410	of 10,000	or 531	G 4 1 005
16. Avetrana	511/2	1 of 1671	Crawford 511	Crawford, p. 667;
			or 534	RRCH 440.
Corsica				
17. Aleria	511/4	1 of 106	Crawford 511	RRCH 433.
Sardinia				
18. Terranova	511/2	uncertain	ca. 6 B.C.	BMCRR 2, p. 48.
Pausania	511/3			
	511/4			
Sicily				
19. Zara	511/3	1 of 276	RIC ² , p. 63, 48; p. 64, 59	Sorda.
20. RIN Hoard	511/1	uncertain	uncertain	RRCH, table 16.
	511/2			
	511/3			
	511/4			
21. West Sicily	511/2	9 of 172	Crawford 511	RRCH, table 16.

[°] Crawford places two groups distinguished by Cutroni, AIIN 1962/64, pp. 163–73, in one hoard (see RRCH, nos. 135 and 435).



Find Spot	Type	No. of Coins Found	Latest Coin	Ref.
	511/3	17 of 172		
	511/4	7 of 172		
22. Bagheria	511/3	4 of 14	<i>RIC</i> ² , p. 55, 205	Crawford, p. 667; RRCH 523.
Romania				
23. Tibru	511/4	1 of unknown number	Augustan	Pavel.
24. Gradistea de	511/2	1 of 635	27 B.C.	Chitescu 90.
Munte	511/3	3 of 635		
25. Seica Mica	511/3	1 of 348	Augustan	Chitescu 193.
26. Ciuperceni	511/2	1 of 161	Augustan	Chitescu 48.
27. Plopsor	511/2	1 of 60-70	Crawford 511 or <i>RIC</i> ¹ , p. 60, 6	Chitescu 146.
28. Lipovu	511/3	1 of 7	Crawford 511	Chitescu 110.
29. Medias Sibiu	511/4	1	isolated find	Chitescu 111*.b
30. Augustin	511/1	1 of 294	Caligulan	Chitescu 9.
	511/2	1 of 294		
31. Cernat	511/3	1 of 4	Crawford 511	Chitescu 42.
32. Fotos	511/3	1 of 280	Tiberian	Chitescu 79.
33. Breaza	511/3	1 of 132	Augustan	Chitescu 29.
34A. Covasna	511/3	1	isolated find	Chitescu 53*.
34B. Covasna	511/3	1 of	Vespasianic	Chitescu 54.
		unknown number		
35. Cornii de Sus	511/3	5 of 112	Augustan	Chitescu 51.
36A. Poiana I	511/2	2 of 152	Augustan	Chitescu 148.
36B. Poiana V	511/3	1 of 190	Augustan	Chitescu 152.
36C. Poiana	511/4	1	isolated find	Chitescu 140.
37. Fitionesti	511/3	1 of	Tiberian	Chitescu 75.
		unknown number		
38. Apoldu de Sus	511/3	1	isolated find	Mitrea.
39. Niculitel	511/3	1? of 161	Claudian?	Chitescu 132.
40. Pincesti	511/2	1 of 202	RIC ¹ , p. 103, 3	Chitescu 143.

^b Numbers followed by an asterisk are in Chitescu's listing of "Isolated finds."



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THE SMALL, ARMED-MAN COINS OF BALDWIN II

(PLATE 10)

PAUL Z. BEDOUKIAN

The coinage of the Crusaders can be divided into two categories: the early pieces which were struck in Greek characters by the first generation of princes, from around 1098 to 1130, and the later pieces with Latin legends, struck by succeeding rulers until the collapse of the Crusader principalities in 1291. The coinage of two of those first generation principalities, Antioch and Edessa, deserves further study.

Antioch was part of the Byzantine empire until its capture by the Arabs in 638. The 'Abbāsids struck coins there until 870 when the city again passed into the hands of the Byzantines. After that, for whatever reason, no coinage was struck in Antioch by the Byzantines or by the Turks who took over the city in 1084. When the Crusaders captured the city, anonymous bronzes (which as Bellinger indicated were imported from Byzantium)¹ were found in circulation. They weighed about 4.5 grams and differ markedly from the first Crusader bronzes weighing about 7.5 grams.

¹ A. R. Bellinger, The Anonymous Byzantine Bronze Coinage, ANSNNM 35 (New York, 1928); M. Thompson, The Athenian Agora 2: Coins from the Roman through the Venetian Period (Princeton, 1954), pp. 109–15; P. D. Whitting, "The Anonymous Byzantine Bronze," NC 1955, pp. 89–99.



The history of the Crusader armies on their way to Jerusalem has been described in detail in scholarly publications.² At the time when the crusading armies were in Cilicia, Baldwin of Boulogne decided to move eastward rather than join the troops marching toward Antioch. He had received an invitation from Toros, the childless Armenian ruler of Edessa, to come and inherit the town. Baldwin arrived in Edessa on February 6, 1098, and was welcomed by Toros and the Armenian population. He was adopted by Toros and became co-regent of Edessa. By March 10, through various intrigues, Baldwin had became sole ruler of Edessa.³

Other armies continued marching toward Antioch. Upon reaching the city, they laid siege to it and the Norman Bohemond of Taranto was one of several petty rulers who played an important role in its capture. Through calculated maneuvers, he gained control of Antioch and, in spite of his oath to the Byzantine emperor Alexius Comnenus to return Antioch to him, he claimed the city for himself, assuming the title of prince of Antioch. He ruled the city from June 3, 1098, until he was made prisoner by the Dānishmendids in 1100, striking heavy coins with a bust of St. Peter on the obverse and the cross as a tree of life and his initials on the reverse.

In the same year that Bohemond was taken captive, Godfrey of Bouillon, the king of Jerusalem, died. His brother Baldwin, ruling in Edessa, was invited to take his brother's throne. He appointed a distant relative, Baldwin of Le Bourg, as his replacement and departed for Jerusalem on October 2, 1100, with 200 knights and 700 footmen (see Figure 1).⁵ He went by way of Antioch where he was offered the regency, as Bohemond had been taken prisoner some months earlier. He declined the offer and on November 9 reached Jerusalem. He was crowned King Baldwin I in Bethlehen on December 25, 1100, and Baldwin of Le Bourg became count of Edessa, ruling from 1100 to 1104,



² Steven Runciman, A History of the Crusades, vol. 2 (Cambridge, 1952); Rene Grousset, Histoire des Croisades, vol. 2 (Paris, 1935); Kenneth M. Setton, ed., A History of the Crusades, vol. 1 (Philadelphia, 1955).

³ Setton (above, n. 2), pp. 299, 302-4; Runciman (above, n. 2), pp. 195-96, 202-8; Grousset (above, n. 2), pp. 43-61.

⁴ Runciman (above, n. 2), pp. 213-62; Setton (above, n. 2), pp. 324-27, 373-75.

⁵ Setton (above, n. 2), p. 381; Runciman (above, n. 2), p. 36.

when he was taken prisoner in the battle of Harran, remaining in captivity until 1108.

Fig. 1: Chronology

Antioch		Edessa	
1098-1100	Bohemond (captive,	1098-1100	Baldwin of Boulogne (to
	1100–1103)		Jerusalem)
1100-1003	3 Tancred (to Edessa)	1100-1104	Baldwin of Le Bourg (cap-
			tive, 1104-8)
1103-4	second reign, Bohemond	1104	Tancred
1104-12	second reign, Tancred	1104-8	Richard
1112–19	Roger of Salerno	1108-18	second reign, Baldwin of Le
			Bourg (to Jerusalem)
1119-26	Baldwin of Le Bourg	1119-31	Joscelin
1126-30	Bohemond II		

Baldwin of Le Bourg was released from captivity in 1108 and took Edessa back from Richard. His second rule lasted for ten years (until he left for Jerusalem to be consecrated king). During this period, he overstruck some of Bohemond's coins with his name as "count of Edessa." We must assume that the armed-man overstrikes were also issued in this period because they are found overstruck on Richard's coins but not on any bearing Baldwin's own name—implying that Baldwin had issued no coins during his previous reign. Furthermore, the armed man appears to be his type because at a later date, when he became regent of Antioch (1119–26), he issued in his name a similar type, although on a smaller flan.

The mint in Antioch in which the heavy coppers had been struck for Bohemond from 1098 to 1100 apparently temporarily ceased its activities after he was taken prisoner by the Dānishmendids in 1100. For the almost three years that he was away, the understanding was that if Bohemond were freed within three years and Tancred was no longer needed, he would return to Galilee to obtain his former fief. Since he was not an appointed regent, Tancred probably did not strike coins during this period and the three varieties of coins bearing his name fit into the later period of his regency in Antioch (1104–12).



[•] Runciman (above, n. 2), pp. 143-49; Setton (above, n. 2), p. 419.

⁷ Runciman (above, n. 2), p. 32.

When Bohemond resumed his reign over Antioch (May 1103), he resumed striking coins bearing his name (Schlumberger, pl. 2, 9–10).8 It is significant that beginning with these issues, Bohemond and all the succeeding rulers of Antioch issued small coppers only. In 1104, Bohemond sailed for Europe to raise a new army of Crusaders. Tancred became ruler of Antioch for the second time,9 from 1104 to 1112, and issued coins bearing his name (Schlumberger, pl. 2, 12–14). On his death in 1112, Antioch passed into the hands of Roger of Salerno¹⁰ who ruled for six years until June 28, 1119, when he was killed in battle against Il-Ghāzī. His coins are well known (Schlumberger, pl. 2, 15–17).

The city of Antioch was now left leaderless. Baldwin II, who had succeeded Baldwin I as king of Jerusalem on April 2, 1118, was invited by the citizens to become regent of Antioch. He accepted and retained his title as regent until 1126. It was during this seven-year term that Baldwin II issued the small, armed-man coppers bearing his name (Schlumberger, pl. 2, 18–23).

In 1126 the son of Bohemond I returned to Antioch to claim his father's rule as Bohemond II, prince of Antioch, 1126–30. ¹¹ It should be kept in mind that even at this late date, no coins were struck in Jerusalem, probably because of the absence of minting facilities.

The small, armed-man issues have been attributed to Baldwin I of Edessa. It is most unlikely, however, that any facilities existed for striking coins in the small town of Edessa which was incorporated into the Byzantine empire in 1031. Edessa had very little history of mint activity. A few Umayyad and early 'Abbāsid coppers from this town are known, the last ones being struck in 798. The next indication of minting activities there came in the early thirteenth century with the striking of the Ayyūbid issues.

If Baldwin I of Boulogne, the first ruler, had succeeded in establishing a mint in Edessa, it follows that Baldwin II of Le Bourg in his first



⁸ G. Schlumberger, Numismatique de l'Orient Latin (Paris, 1878).

[•] Setton (above, n. 2), p. 392; Runciman, (above, n. 2), p. 47.

¹⁰ Runciman (above, n. 2), p. 125; Setton (above, n. 2), p. 401.

¹¹ Runciman (above, n. 2), p. 152; Setton (above, n. 2), p. 414; F. R. Ryan, transl., A History of the Expedition to Jerusalem (Knoxville, 1969), p. 231.

reign, Richard of the Principate, and Baldwin II in his second reign would have utilized the mint to strike coins. The fact that not a single coin of these rulers has been found struck on a clean flan constitutes strong evidence that no mint was in operation Edessa. The order of overstrikes, discussed below agrees with the sequence of reigns.

Fig. 2: Sequence of Issues at Edessa

Ruler	Dates	Issues
Baldwin I of Boulogne	1098-1100	No coins
Baldwin II of Le Bourg	1100-1104	No coins
Tancred as Regent	1104	No coins
Richard of the Principate	1104-1108	Coins overstruck on Bohemond
Baldwin II of Le Bourge	1108-1118	Armed-man coins overstruck on
(second rule)		Richard and Bohemond
		Baldwin coins overstruck on
		armed man, Richard and
		Bohemond

The evidence in favor of the issuance of the heavy copper coins in Antioch is convincing. It was a large industrial city where a mint could readily have been put in operation to strike coins during the two years that Bohemond was its ruler, not a difficult task for an ambitious and energetic man. In view of the fact that the anonymous bronzes had been in circulation for some time, it could be expected that he would choose an obverse design resembling them. On the reverse, he placed his name represented by the four letters B, Λ , Δ , and N in the angles of the cross.

The interpretation of these four letters has led to considerable confusion among numismatists, including Saulcy, ¹² Schlumberger, ¹³ and Porteous, ¹⁴ who read them as $B\alpha\Lambda\Delta\omega\nu$, Nos. The letters could just as well be read, however, as $BoA\mu\nu$ N $\Delta\omega$ because in the early coinage of the Crusaders, the engravers, perhaps in ignorance of the letters Λ , Λ , and Δ used them interchangeably. Schumberger himself was aware of this fact



¹² F. De Saulcy, Numismatique de Croisades (Paris, 1847).

¹⁸ Schlumberger (above, n. 8), p. 19.

¹⁴ J. Porteous, "The Early Coinage of the Counts of Edessa," NC 1985, pp. 169–82, pls. 14–17.

when he stated that the four letters represented Balaouinos or Balaouinos. Further proof attesting to the fact that the three letters were used interchangeably is provided by the legends of the small, armedman coins. Thus, in Schumberger (pl. 1, 9 and 12), the second letter is shown as Δ instead of A; in no. 11, the second letter is clearly A and not Δ ; in no. 10, however, the third letter appears as A instead of Δ .

It is also interesting to note that, in coins of this period (1098–1130), the legend appears in a non-uniform order. For example, in Schlumberger, pl. 1, 7, it is written in circular clockwise fashion. In nos. 8, 9, and 12, the legend on the left reads counter-clockwise and on the right, clockwise. It can be concluded, therefore, that the four letters seen on the reverse of the heavy bronze coin under consideration can be read clockwise as BoAmundos or in Z fashion as Bandounnos. The succeeding rulers of Antioch, namely Tancred, Roger, and Bohemond II, likewise issued coins which did not exhibit a uniformity in the presentation of the legend.

Having established that the three letters Λ , A, and Δ were used interchangeably, one is justified in reading the legend of Schlumberger, pl. 1, 5, with the letters $B \Lambda \Delta N$ not as $B \alpha \Lambda \Delta O \cup N O S$ but as $B \Lambda \Delta N$ or $B O \Lambda U \cap N O S$ thereby attributing it to Bohemond I, prince of Antioch.

Merely a dozen or so of these coins are known to have survived. In addition, Porteous mentions another type, represented by a single specimen, with the letters XBBK in angles. Porteous reads this as Χριτε Βοηθεν Βαλδουινο Κομη. In the writer's opinion, the letter B stands for Bohemond rather than Baldwin.

All the remaining large bronzes of Bohemond have been overstruck. Porteous has made a painstakingly detailed study of sixty-six of these overstrikes in various museums and private collections. It is highly significant that every one of these pieces bears the name of Richard, or shows an armed man or the name of Baldwin. Not a single coin of the latter three types has been struck as an original issue on a blank. This can be explained by the lack of minting facilities in the small town of Edessa. Its rulers, Richard and Baldwin, had to be satisfied by overstriking the bronzes of Bohemond of Antioch.



¹⁵ Schlumberger (above, n. 8), p. 20.

In order to establish the premise that the small, armed-man coins bearing the name Baldwin were struck during his regency in Antioch and not while he was ruler of Edessa, it is necessary to find small, armed-man overstrikes on Roger or Tancred, the preceding rulers of Antioch. There are overstrikes of Tancred on Tancred, Roger on Roger, even Roger on Tancred but until recently small, armed-man overstrikes on Roger or Tancred had not been definitely identified.

Thanks to the interest and vigilance of Mr. Roberto Pesant whose studies on the coinage of the Crusades are well known, several specimens have turned up which establish the existence of these overstrikes and definitely indicate that the small, armed man was struck in Antioch from 1119 to 1126 when Baldwin was regent of Antioch. Because of the poor condition of the coins and the difficulty of deciphering the overstrikes (some are palimpsests, or multiple overstrikes), a number of drawings prepared by Mr. Pesant are presented here along with the photographs of the coins.

Berlin (Plate 10, 1). Dr. H. D. Schultz of the Berlin Museum was kind enough to send a cast of this small, armed-man piece overstruck by Baldwin II on a Tancred coin. The overstriking is of the type shown in Schlumberger, pl. 1, 8. It is overstruck on the reverse of Tancred shown in Schlumberger, pl. 2, 6. The figure of the knight holding the cross with his right hand is clearly visible, and there are traces of some uncertain letters to the right. This coin appears to be a palimpsest. The reverse also shows evidence of more than one overstrike. As expected, the reverse represents overstriking of the reverse of Schlumberger, pl. 1, 8, on the obverse of Schlumberger, pl. 2, 6. Parts of the large cross of Baldwin II and the halo of St. Peter belonging to the Tancred coin are still readily discernible, along with two letters.

Bedoukian (Plate 10, 2). This also appears to be a palimpsest and represents Baldwin II overstruck on Tancred. The small, armed man (Schlumberger, pl. 1, 8) is overstruck on an uncertain type. The reverse shows the ornamental cross (Schlumberger, pl. 1, 8) overstruck on Tancred (Schlumberger, pl. 5, 1). The cross and the halo of the latter, and perhaps the head, are visible to the left of the ornamental cross. There are traces of letters to the right of the cross which appear to be XC. Bibliothèque Nationale (Plate 10, 3). The obverse of this Baldwin II coin (Schlumberger, pl. 1, 10) is an overstrike on the obverse of Tancred



The upper number corresponds to Schlumberger's pl. 1 numbers; the lower number corresponds to Porteous' catalogue numbers.

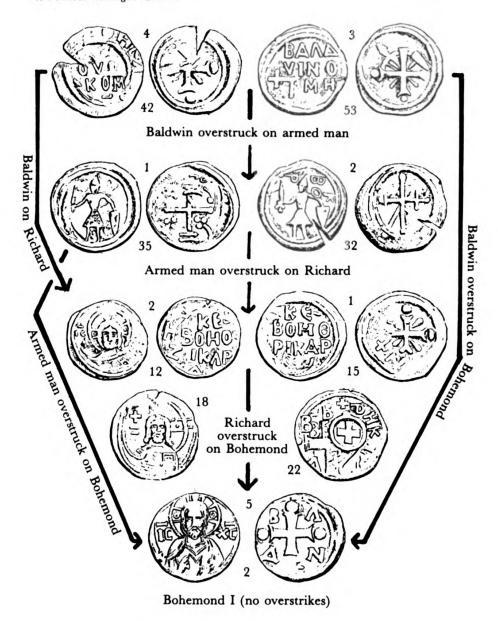


Fig. 3: Sequence of Overstrikes

(Schlumberger, pl. 2, 8). The reverse of the coin is in very poor condition, but traces of the letter **B** (reverse of Schlumberger, pl. 1, 10) can be seen. It seems to be overstruck on the reverse of Tancred (Schlumberger, pl. 2, 8), because one sees traces of the cross and part of the letter **P**. **Pesant** (Plate 10, 4). The armed-man overstriking is clearly of the type in Schlumberger, pl. 1, 10, and is on Tancred (Schlumberger, pl. 2, 8). The reverse overstrike is again of the armed-man type (Schlumberger, pl. 1, 12) and the original coin appears to be that of Tancred (Schlumberger, pl. 2, 8).

Pesant (Plate 10, 5). On the obverse, the armed man (Schlumberger, pl. 1, 8 or 9) is overstruck either on Tancred (Schlumberger, pl. 2, 8) or possibly on the reverse of the armed man (Schlumberger, pl. 1, 12). The reverse shows the armed man (obverse of Schlumberger, pl. 1, 12) struck over an uncertain type. There is evidence of more than one overstrike.

Although we must allow for error in deciphering the overstrikes, many of which are palimpsests, Figure 3 gives us a clear picture of the order in which these coins were issued. It is apparent that Bohemond coins were the earliest and were struck in some quantity. They were overstruck first by Richard (no Richards are overstruck on the armed man or on Baldwin), then by the armed man (some armed-man coins are overstruck on Richard but none on Baldwin), and finally by Baldwin (on armed man, Richard and Bohemond).

After carefully examining all the evidence presented above, the writer has become convinced that upon becoming ruler of Antioch Bohemond struck a number of heavy coppers, that some of them were overstruck by the two rulers of Edessa, and that succeeding rulers of Antioch continued striking small coins, including those struck by Baldwin II, king of Jerusalem, during the period when he was also regent of Antioch.



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THE TRANSITIONAL COINS OF PERU

(Plate 11) H. P. Flatt

The first coins of Peru's metric coinage appeared in 1863, but the design originated in the so-called transitional coins of 1858 to 1861. There is an extremely rich numismatic history behind these coins but this article presents only those factors considered to bear most directly on the coins actually emitted.

The problems which confronted Peru's coinage by the middle of the 1850s were indeed significant. The machinery of the mint had been allowed to fall into a bad state of repair through lack of usage. The need to convert to the more modern decimal system had also been recognized and the first step had been taken by ordering in the United States new machinery for the Lima mint. The engineer of the mint, Jorge Rumrill (or Rumbrill), had been sent in 1854 to Philadelphia to procure the machinery as well as to obtain matrices for the new coinage. The most immediately evident results of his efforts were the pattern coins of 1855. ¹

Another aspect of the coinage problem which confronted Peru was that the circulating coins were primarily debased coins, moneda feble, originating in Bolivia, although the moneda feble minted at an earlier time in the Cuzco, Arequipa, and Pasco mints remained in circulation. While foreign debased coins (other than the Bolivian) were not accepted in governmental offices, the Bolivian coins were by now essential to

¹ H. Flatt, "The First Foreign Coins Struck by the Philadelphia Mint," *The Numismatist* (January 1986), pp. 38-43.



meet the internal commercial needs of the country in the absence of the legitimate coins which had been almost entirely driven out of circulation. Many plans had been advanced to withdraw the coins through some method of amortization, but none had been implemented. The extensive counterfeiting of these coins and the legitimate Peruvian coins was an additional complication. The comparatively simple designs of these coins greatly facilitated the counterfeiting of them both inside Peru as well as in other countries, while the relatively rapid wear of the debased coins made it even more difficult to distinguish the false coins from the true. As an illustration of the problem, Pedro Carrillo, the director of the Lima mint, noted on June 22, 1858, that there had been received in the treasury of the mint 4048 pesos in "moneda falsa boliviana." ²

Apparently all of the new equipment ordered for the mint was in Peru by the end of 1855.³ Minting in Lima was stopped in 1856 in order to facilitate the installation of the machinery. The installation nonetheless proceeded very slowly, as noted in a request of May 1857 for new proposals to hasten the process. Rumrill made a proposal which was accepted on July 3,⁴ and the work proceeded very rapidly thereafter, being completed by the end of 1857. The power for the mint had previously been supplied by the waters of the Huatica, a source which frequently failed from July to December. A steam engine was also installed so that minting could proceed at any time.

In anticipation of the beginning of minting at Lima, several other actions were taken by the government. Two laws were approved on October 2, 1857. The first of these was published the next day in *El Peruano* and provided for 90 percent fine gold and silver coins as well as copper coins, although the gold and copper coins were not produced in this period. The denominations of the silver coins were exactly the same as those of the pattern coins of 1855—peso, fifty centimos or half peso, peseta or twenty centimos, dinero or ten centimos, and half dinero or five centimos. The weight of the peso was to be 475 grains as compared to the former 542 grains of the older pesos or the 480 grains of the law of 1855 and the smaller coins were to have proportional weights, but

- ² Archivo General de Nacion (A.G.N.), O.L. 414-153.
- ³ El Comercio, March 30, 1858.
- 4 El Peruano, July 18, 1857.



it is to be noted that no tolerances in the weights were prescribed. Another article of this law provided that the head of state could essentially make whatever alterations he deemed expedient in the design, relief, dimensions, etc. of the coins, including their weight.

The second and secret law, not published until 1862, basically authorized the head of state to take whatever measures he deemed convenient in order to retire from circulation the moneda feble.⁵ Part of this law authorized him also to order whatever changes in regulations were required in the mints of Peru in order to make uniform the coins. This particular reason was given in the decree of October 29 which closed the mint at Pasco.⁶ The decree pointed out that the lack of uniformity facilitated the counterfeiting of legitimate Peruvian coins. A later resolution (January 15, 1858) in response to a protest to the closing of that mint by miners in the district also noted concern about the lack of control of remote mints in times of civil disorder—a not uncommon situation in Peru in the period.⁷

As previously noted, the installation of the machinery was completed by the end of 1857. It included four coin presses (one each for pesos, half pesos, pesetas, and small change) as well as other equipment which in practice proved insufficent to supply the number of planchets necessary to keep the presses busy. The supply was barely able to keep up with the press which produced half pesos at a rate of 4,000 per hour.⁸ Additional equipment was ordered from Europe and additional employees added, including some from the former mint at Pasco. The resident minister of Peru in London, Don Francisco de Rivero, was asked to search for an engraver for the mint who would be qualified to design new coins. After a vigorous competition, he decided upon Robert Britten, a young apprentice and teacher in the Birmingham mint.⁹

The first coins produced in 1858 used dies produced from matrices brought from the United States. The denominations were fifty centimos and one-half real (Plate 11, 1-2, Yeoman numbers Y1 and Y2, the

- El Peruano, May 7, 1862.
- El Peruano, November 18, 1847.
- ⁷ El Comercio, January 18, 1858.
- ⁸ El Comercio, March 30, 1858.
- A. Tamayo Barrios, "Un Grabador de la Casa de Moneda de Lima," *Numismática* 32 (1979), pp. 24-25.



standing Liberty coins). The latter denomination was not mentioned in the October 2 law and was undoubtedly authorized in accordance with the article of that law concerning uniformity in order to provide some continuity with earlier coins. The fifty-centimos coins appear to be comparatively uniform, with only a difference in the size of the numerals 5 and 8 in the date forming minor varieties. There are a number of varieties of the half reales, many of which differ only in the size of a block of metal surrounding the letters in the legends as well as the date. Other varieties have a period between the M and R (representing medio real), while some do not. Both varieties occur with a recut 5 in the date.

Upon his arrival in Lima, Britten had set to work and on May 14, 1858, the following decree was issued.

Taking into consideration that the type of the national money, engraved on matrices brought from the United States with the new machinery, is lacking the perfection necessary to avoid counterfeiting; that the design presented for silver coins by the Talla abridor of the Casa de Moneda of this capital, adjusted by the modifications and improvements that were prescribed, join together the conditions appropriate for perfect coins; and that by article 7 of the law of October 2 of the past year, the head of state is authorized to make the alterations judged opportune in the pattern, relief, milling and dimensions of all coins. The referenced design, compared with the old type, has the following changes: the statue of Liberty that is portrayed standing on the obverse of the old type, appears in the new seated over a shield on which is found sculptured the sun and has in front a column trimmed with a civic wreath, with the motto LIBERTAD; the value of the coin, that on the old type is designated with the word centimos, appears on the new with that of centavos, abbreviated in the form Cs; as far as the reverse, there result no substantial alterations, saving that which is the consequence of the better design and of the engraving; and in consequence, it is ordered that from the present date, the fabrication of all the silver coins, must conform strictly to the new design approved by this



decree. Communicate, register and publish. Two signatures of the Council. Zevallos.¹⁰

The only coin struck in 1858 with this new design was the fifty-centavos piece (Plate 11, 3) which had the same assayers' initials M B (for Manuel Carassa y Jaramillo and Bernardo Aguilar) that had appeared for twenty years on Peruvian coins. Sometime in September Carassa, who had been ill, was replaced as senior assayer by Ygnacio Ortiz de Zevallos, the former director of the Pasco mint; usbsequently there are coins with the assayers' initials Y B (Plate 11, 4). With the exception of one variety (probably, but not certainly, the first which appeared), all known varieties also bear the engraver's initials R B beneath the shield on the obverse (as was designated in the governing decree). This use of the initials of the designer was not common at that time on Peruvian coins, although initials (J B for Juan Pablo Bustamante) had appeared on the four reales of Pasco in 1855 and the full name of Barre had appeared on some varieties of the peso of 1842.

There are eight varieties currently known of the seated Liberty fiftycentavos coins (Y6) of 1858. This is unexpectedly large in view of the total mintage of only 412, 444 pesos for all the coins of that year. Most are minor varieties described in the Appendix; the major varieties are distinguished by the change in the assayers' initials mentioned above and a fairly significant change in the design of the reverse for some of the coins with the assayers' initials Y B. The most obvious change in the design was in the addition of a ponytail or dangling lock in the hair arrangement on the head of the figure, but there are a number of other changes obvious on more careful scrutiny, including the design of the shield and the hand resting on it.

The number of minor varieties can be attributed to poor workmanship in the mint, a criticism detailed in an extremely influential folio written at the end of 1858. Authored by the Polish engineer Ernesto Malinowski, formerly in charge of the *fielatura* of the Lima mint, the folio commented extensively upon the deficiencies in the law of 1857 as well as problems in the operation of the mint. One of the problems of the



¹⁰ El Comercio, May 14, 1858.

¹¹ El Peruano, September 25, 1858.

¹² E. P. Dancuart, Anales de la Hacienda Publica del Peru (Lima, 1906), vol. 8, p. 72.

¹⁸ E. Malinowski, La Moneda en el Perú (Lima, 1859).

law was the weight of the peso, which did not readily lend itself to a decimal subdivision. Malinowski suggested the use of a 500 grain standard, which was closer to the older 542 grains and which could readily be subdivided. Another problem was the lack of specification of tolerances in the weights of the individual coins. For example, the regulations of 1830 (article 60) permitted only a variation of up to 3 grains in the four reales and up to 1 grain for the half reales.14 Malinowski reported that he had found a variation of 16 grains from the heaviest to lightest of the half pesos (both Liberty standing and seated varieties). Malinowski collected 150 medios or half reales. He found 8 that weighed 252 grains (average, 31.5) and another 8 that weighed only 211 grains (average, 26.4). He also found one coin that weighed 32 grains while another weighed only 24 grains, slightly over the nominal weight prescribed in the law. He felt that the employees of the mint had not been accustomed for many years to making "good" coins and needed more education in order to catch up with the practices in other mints. Malinowski also said that these coins only seemed well made in comparison to the earlier "rough" coins made in Peru, but did not compare favorably with those made in other countries at that point in time. His position was that the perfection of minting practices was required in order to provide a "unique guarantee" against the counterfeiting of coins. Malinowski made many specific recommendations in his folio, almost all of which were subsequently incorporated into law.

While Malinowski's folio was being written, Ortiz de Zevallos sent a letter, on November 3, 1858, to the minister of finance on the subject of the weight of coins. He also recommended the use of a 500 grain standard for the gold sol so that Peru's coinage would be in accord with that of the "civilized nations" with which Peru did business. He proposed that the ratio of silver to gold should be 15 1/2 to 1 and that there should be six silver coins—a peso of 25 g (ca. 386 grains), a half peso of 12.5 g, a quarter peso of 6.25 g, a peseta of 5 g, a dinero of 2.5 g, and a half dinero of 1.25 g; five gold coins—a sol equalling 20 pesos and weighing 32.253 g, (ca. 498 grains), a half sol of 16.129 g, a doblon of 8.264 g, an escudo of 3.225 g, and a half escudo of 1.612 g; and two copper coins—one centavo and a half centavo.



¹⁴ Reglamento para las casas de Moneda de la república peruana (Lima, 1830).

¹⁵ El Comercio, March 1, 1860.

There appears to have been a consensus at this time as to the proper weight to be used for the coins, and on February 16, 1859, an order was given providing for the issuance of half- and one-real coins (Plate 11, 5-7). The weight of these coins was to be 25 and 50 grains, respectively, corresponding to a peso weighing 500 grains. The coins were intended to meet the overwhelming need for small change. Apparently, however, the coins appeared only in the latter part of 1859¹⁷ and were comparatively scarce. It was noted early in 1860 that "the merchants and in particular those that sell at retail are almost in a state of desperation because of the lack of small coins." It appears that by less than a month later the minister of finance had ordered the minting of more small coins. A total of 156,341 pesos in these small coins of half and one real was made in 1860, followed in 1861 by 37,796 pesos. Po

There are many minor varieties of both coins which differ in the placement of periods or colons in the legend on the obverse, and the reverse die for the half real of 1860 has one significant difference. The obverse die used for the one real of 1861 is markedly different from those used in the first two years. One of the several changes to be noted is the presence of bent palm leaves.

The fifty-centavo coins also appeared in 1859, with two major varieties appearing and several minor varieties (including an overdate) as listed in the Appendix. The coin was not made in subsequent years.

A new denomination appeared only in 1859; the twenty-five centavos (Plate 11, 8). It was identical in design to the other coins and only minor varieties are known, including an overdate (1859/8) and the use of a Roman numeral I in the date. In contrast to the smaller coins, these coins do not appear to be made in accord with the recommendations of Ortiz de Zevallos. Their weight appears to average about 5.8 g, a weight consistent with that of about 11.6 g for the fifty-centavo coins.



¹⁶ Dancuart (above, n. 12), vol. 6, p. 189.

¹⁷ El Comercio, September 26, 1859.

¹⁸ El Comercio, February 8, 1860.

¹⁹ El Comercio, March 2, 1860.

²⁰ Dancuart (above, n. 12), vol. 8, p. 72.

These coins are considered rare in higher grades. A total of 256,858 pesos was minted in 1859, a little over half the mintage of the previous year.²¹

The Appendix summarizes the varieties and nuances of the transitional coins currently known to the author. Special attention should be drawn to the half real of 1860. In all specimens seen by the author, the letters M. R., medio real, have been repunched over 5 Cs., the designation called for in the original law of 1857 and modified by the decree of 1858. This suggests that serious consideration had been given to going to a fully decimalized system and that matrices had been prepared for other denominations. This is confirmed by an inventory carried out in 1859: "New matrices with the seated Liberty: set of matrices and reproductions from the coin of one peso until that of five centimos. Matrices for gold: a set of matrices and reproductions for the coin of twenty pesos The same for the coin of ten pesos." 22

This reference appears to make clear the origin of the reverse die for the half real of 1860 as well as the obverse die for the one sol of 1864–68 which has a 6 punched over a 5. Just as the matrices for the five centavos were used to prepare dies for the half-real coin, it appears that the matrices for the ten and twenty pesos were used to prepare dies for the four and eight escudos of 1862 and 1863. However, according to the law of December 18, 1862, these coins were made in accordance with the regulations of 1830 as to fineness (0.875 or 21 carets) and weight (542 grains). Apparently this was done as a part of a struggle for power between the Peruvian congress and the head of state. The gold for the coins had come to Peru as a result of an English loan negotiated by a Peruvian representative, but the loan had not been authorized by the congress. After a long debate, perhaps yielding to the inevitable need for more money for the Peruvian economy, congress acquiesced in the stamping of the gold, but specified that the earlier regulations be followed as to weight and fineness. This action removed the flexibility the head of state had been granted under the law of 1857.

It is also interesting to note that some, if not all, of these coins were made after the passage of the law of January 31, 1863, which finally



²¹ Dancuart (above, n. 12), vol. 8, p. 72.

²⁸ Private files of Eduardo Dargent Chamont, Lima.

determined Peru's metric system for coinage. Details are contained in a note dated March 2, 1863, from José Castañeda to the director of the mint.²³

Whatever the difficulty with the new design, it did appear to accomplish one significant result: there are no counterfeits of this series of coins which are presently known. While counterfeits of the subsequent decimal coins are known, the complexity of the design apparently forestalled immediate activity on the part of the counterfeiters.

On the other hand, the "transitional" coins clearly failed to supplant the debased Bolivian coinage as the primary coinage of the country. There were several million pesos of bad coin in circulation, and the quantity of coin made was not sufficient, even ignoring other factors. Apparently the issuance of the coins caused some concern initially in Bolivia where it was believed that the financial situation would grow worse when the replacement of the moneda feble actually began in Peru.²⁴ The coins and some diplomatic negotiations perhaps contributed to the return in Bolivia to the minting of coins of the full fineness of 10 dineros 20 grains (but of less weight) in 1859.²⁵ However, the events of the period perhaps served best as an illustration of Gresham's law that "bad money drives out good." The acting English consul in Islay wrote in 1862 that:

It can scarcely be said that Peruvian coinage exists, inasmuch as that in circulation at present is from the mint of Bolivia. For some time past no money has been coined in Peru; neither is anything being done in the matter of coining at present, either in Lima or Cuzco, the machinery there being antiquated, and of very little use. That which was used in Arequipa is destroyed altogether. About three years since half a million of dollars was coined in Lima, consisting of four reals, of two, of one, and half-real pieces, but being good money, the whole of it was shipped to England, leaving in the country the so-called Bolivian money only, which contains an alloy of copper amounting to 40 percent.



²³ A.G.N., O.L. 453-37.

²⁴ El Comercio, June 25, 1859.

²⁵ El Peruano, October 26, 1859.

The want of good coinage in this country has affected the Peruvians injuriously with respect to the neighboring republics, particularly with that of Chili, where Bolivian money is not circulated, unless at a loss of at least 30 percent.²⁶

Peru was not able to deal with the problem of the Bolivian moneda feble until the government developed a plan for the amortization of the existing moneda feble and the mint was prepared to produce good coins in sufficient quantities to meet the commercial needs of the country. This process began in 1863 with the conversion to a fully metric monetary system using the designs and minting experience gained through the issuance of the "transitional coins."

APPENDIX: DIE VARIETIES

STANDING LIBERTY

Fifty Centimos (Y2)

- a. 1858 M.B., normal date; F. Coll.
- b. 1858 M.B., normal date, 50 CENTIMOS / 50 CENTIMOS; W. Coll.
- c. 1858 **M.B.**, small date; C. Coll.

Half Real (Y1)

- a. 1858 M.B., M.R. on reverse; F. Coll.
- b. 1858 M.B., M.R. on reverse, recut 5; C. Coll.
- c. 1858 M.B., M.R. on reverse, deeply punched lettering; C. Coll.
- d. 1858 M.B., MR on reverse, letters on blocks; F. Coll.
- e. 1858 M.B., MR on reverse; recut 5, letters on blocks; F. Coll.
- f. 1858 M.B., MR on reverse; deeply punched lettering on blocks, C. Coll.

SEATED LIBERTY

Fifty Centavos (Y6)

Type 1:

Obv. 17 palm leaves, berries in laurel

²⁶ Parliamentary Accounts and Papers, Commercial Reports (London, 1863), vol. 70, p. 300.



Rev. Liberty's hair in bun; wreath arranged counterclockwise; low base behind shields; long rays on shield

Type 2:

Obv. as Type 1

Rev. Liberty's hair with ponytail or dangling lock; wreath arranged clockwise; high base behind shield; long and short rays on shield

Date	Assayers' Initials	Engraver's Initials	Cs	Type	Coll.
1858	M B	None	*	1	F
1858	M B	Incuse R.B.	*	1	F
1858	M.B	Incuse RB	*	1	F
1858	M B	Incuse R.B.	•	1	Н
18/858/8	M B	Not recorded	*	1	Н
18/1858	Y. B	Incuse R.B.		1	F
1858	Y. B	Incuse R.B.	•	1	F
1859	Y. B	Incuse R.B.	•	1	S2
1859	Y. B	Incuse R.B.	*	1	C
1858	Y. B	Raised RB	•	2	F
1859/8	Y. B	Incuse R.B.	•	2	F
1859	Y. B	Incuse R.B.	•	2	F

- *, no period under Cs
- ., period under Cs
- -, bar under Cs

Twenty-Five Centavos (Y5)

Obv. 11 palm leaves, berries in laurel

Rev. as Type 2 but loops at capital

- a. 1859 Y.B; R.B.; Arabic 1 over Roman I; F. Coll.
- b. 1859 Y.B; R.B.; assayers' initials close and far; F. Coll.
- c. 1859 Y.B; R.B.; Roman I; H. Coll.

One Real (Y4)

Obv. 1859-60: 11 palm leaves, laurel rearranged

1861: 8 palm leaves (2 bent), laurel again rearranged

Rev. as Type 2, but different capital



Other variations known to the author are minor, such as the precise location of the periods in the legend.

Half Real (Y3)

Obv. 9 palm leaves (2 bent), laurel rearranged with berries

Rev. wreath similar to Type 1, different capital

There are many varieties of these coins primarily distinguished by the presence or lack of punctuation marks in the legend of the obverse.

Year			Legend						
	REPUI	B PER	UANA LIMA 9	D	FINO	Y B			
1859	a.	_	•	•		•			
	b.	•	_	-	_	_			
	c.	:	_	:	•	•			
1860	a.	_	_	_	-	-			
	b.	-	_	_	****	•			
	c.	-	_	-	_	•			
	Rev. M R L, no periods								
	d.	-	_	_	_	•			
	Invert	ed die							
	e.	-	_	•	_	•			
	f.	•	_	•	_	•			
	g.	•	-	•	_	•			
		REPU, 18	/860						
	h.	•	_	•	_	•			
		REPU, 18	/860						
	i.	•	_	•	_	•			
		1. R/R L.							
	j.	•	_	•	-	•			
		ff-center							
	k.	•	_	•	-	-			
	1.	•	_	••	-	-			
1861	a.		•		-	•			
	b.	•	-		_	•			
	c.	•	_		_				



COMPOSITION AND TECHNOLOGY OF ANCIENT AND MEDIEVAL COINAGES: A REASSESSMENT OF ANALYTICAL RESULTS

CÉCILE MORRISSON, JEAN-NOËL BARRANDON, AND CLAUDE BRENOT

The application of modern analytical techniques to the needs of numismatics is no longer a novelty. The progress of non-destructive methods over the last two decades has allowed its development on a large scale, yielding numerous results susceptible to statistical treatment. Most of these data have proved acceptable, have been carefully weighed and compared against each other, and on the whole it can now be said that we know which of the available techniques are best suited to analyze the type of material we intend to study. The time seems

¹ No general scientific reassessment has been published since the pioneering *Methods* (1972) which still remains the fundamental reference although it does not cover methods devised or refined later in their application to numismatics such as proton activation or fast neutron activation.

This article went to press before the publication of A Survey of Numismatic Research 1978-1984, M. Price et al. eds. (London, 1986). In vol. 2, Oriental Numismatics, Medals and Scientific Techniques, see the introduction by W. A. Oddy, pp. 961-77, and successive surveys by Z. Stos-Gale, G. R. Gilmore, and M. R. Cowell, pp. 978-1040.

The authors of this article are members of the C.N.R.S., Centre de recherches numismatiques Ernest-Babelon, Orléans.

BME M. Hendy, Studies in the Byzantine Monetary Economy, c. 300-1450 (Cambridge, 1985).



ripe to leave aside too scrupulous and esoteric arguments about means and to think about aims. Scientists have long inspired awe and veneration in the layman which the historian or archaeologist with a literary training retains. Recently, however, archaeometry has begun to be criticized as costly and self-serving and described as "the employment of modern scientific methods without significant recourse to thought about the wider historical background" and even characterized as "premature sophistication" of "very limited use to the numismatist." We therefore want to focus here on the questions which can be asked and answered and the results which analyses can or should yield following lines of thought which, it is hoped, will meet with general approval.

FINENESS

Numismatic textbooks usually associate analyses mainly and almost exclusively with the study of fineness which is rightly regarded as "essential for any study of the monetary aspects of the coinage." It is

- CEB 1 F. Dumas and J.-N. Barrandon, Le titre et le poids de fin des monnaies sous le règne de Philippe Auguste, Cahiers Ernest-Babelon 1 (Paris-Valbonne, 1982).
- CEB 2 °C. Morrisson, et al., L'or monnayé 1: purification et altérations de Rome à Byzance, Cahiers Ernest-Babelon 2 (Paris-Valbonne, 1985).
- Hendy M. F. Hendy, Coinage and Money in the Byzantine Empire (1081-1261) (Washington, 1969).
- JÖB Jahrbuch der österreichischen Byzantinistik.
- LNV Litterae Numismaticae Vindobonenses (Vienna, 1983).
- Methods Methods of Chemical and Metallurgical Investigation of Ancient Coinage, E. T. Hall and D. M. Metcalf, eds., Royal Numismatic Society, Special Publication 8 (London, 1972).
- MIN Metallurgy in Numismatics 1, Royal Numismatic Society, Special Publication 13 (London, 1980); 2 (London, forthcoming).
- ² BME, pp. 8-9. See also the exaggerated doubts expressed by R. Göbl, System und Chronologie der Münzprägung der Kusanreiches (Vienna, 1984), p. 27.
- ³ P. Grierson, Numismatics (London, 1975), p. 149; P. J. Casey, Understanding Ancient Coins (London, 1986), p. 128, sums up rightly the main problems investigated during the past two decades as "the study of coinage standards and metallurgy, with special emphasis on the composition of coins and the sources of metals incorporated in their fabric."



no surprise that this topic has been the earliest and the most frequently considered. Even in societies with good written records, fineness is often not well documented and the historian welcomes the analytical data which enables him to determine standards for different denominations. X-ray fluorescence analyses of Roman Republican silver thus prove that the quadrigatus, weighing three-fourths of the victoriatus but containing only 83.5% silver versus 96.2%, was intended as its half.4 Later, for the numerous and varied issues of French deniers in the early thirteenth century, for instance, we know of only five texts giving both the intended weight and fineness of some feudal deniers and nothing about the more important royal coinage. The whole of the written evidence hardly covers a quarter of the subject. But a recent study by neutron activation analysis using Californium 2525 has shown that the issues of king Philippe-Auguste which were known out of traditional numismatic evidence to have gained ground in and even out of the royal domaine were able to do so not only through political pressures but also because of their stability and their quantity. And the authors also succeeded in ascertaining the ratios between other different varieties of deniers and in throwing light on what had previously seemed a much more complicated pattern.

Analyses can also reveal completely hidden phenomena. Specific gravity measurements have for example shown an early debasement of the bezant, from the 1040s onwards, which was entirely unknown as it was not mentioned in the sources nor traceable by the eye. Other specific gravity measurements and chemical analyses helped Hendy (1969) and Bertelè (1964), by careful comparison with textual data, to



⁴ D. R. Walker, "The Silver Contents of the Roman Republican Coinage," MIN 1, pp. 59-60.

[•] F. Dumas and J.-N. Barrandon, CEB 1. Other historical aspects and conclusions derived from this numismatic research are developed by F. Dumas in a separate study, "Les monnaies dans le royaume au temps de Philippe-Auguste," La France de Philippe-Auguste. Le temps des mutations, Colloques internationaux du C.N.R.S. 602 (Paris, 1982), pp. 541-74.

⁶ P. Grierson "The Debasement of the Bezant in the Eleventh Century," BZ 47 (1954), pp. 360-94, and "Notes on the Fineness of the Byzantine Solidus," BZ 54 (1961), pp. 91-97.

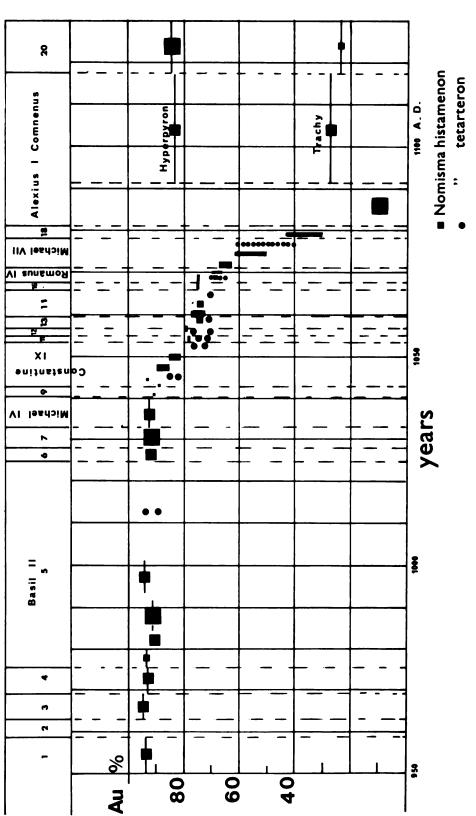


Fig. 1: Gold content of Byzantine Nomisma, 950–1092 (C. Morrisson, Travaux et Mémoires 6 [1975], pp. 3–47)

outline the coinage system of the Comneni and the Palaeologi respectively.7

The clear downward trend of the alloy of eleventh century Byzantine gold coinage (Fig. 1) even helped to correct attributions: an issue of Constantine VIII (1025–28) was reattributed to Constantine IX (1042–55), one of Romanus IV (1068–71) to Romanus III (1028–34), one of Michael V (1041–42) to Michael VI (1056–57)⁸ and other reattributions have been made in the silver series on the basis of neutron activation measurements.⁹

However common this type of evolution, are we entitled to generalize it as a kind of chronological principle, "the baser, the later," and use variations in fineness as a relative dating device? In critical limited periods such as the reign of Postumus just alluded to (see n. 9), it seems quite uncontroversial. In restricted evolutions, such as that of Byzantine gold from Sicily (Fig. 2) in the seventh to ninth centuries or from Constantinople in the eleventh century, it is quite legitimate.

- ⁷ Hendy's final elucidation of the monetary system created by Alexius I Comnenus' reform, Hendy, pp. 14–25; see the review-article by C. Morrisson in NC 1971, pp. 356–66. T. Bertelè, "Lineamenti principali della numismatica bizantina," RIN 66 (1964), pp. 33–118, and Numismatique byzantine, C. Morrisson, ed. (Wetteren, 1978). Bertelè provided, using data obtained through wet-chemical destructive analyses of numerous coins from his own collection, what is still the basis of present knowledge of the post-1261 Byzantine denominational pattern (cf. BME, pp. 535–47).
 - 8 Grierson (above, n. 6), "Debasement" and "Fineness."
- C. Morrisson, "La dévaluation de la monnaie byzantine au x1° siècle: Essai d'interprétation," Travaux et Mémoires 6 (1976), pp. 3-47. Many other examples could be given of such an application of this chronological principle: P. J. Casey (above, n. 3), p. 130, mentions for instance his own reattribution to the beginning of Postumus' reign of an issue previously thought to be at its end but whose fineness proved too high for that date considering the constant debasement of Postumus' coinage, P. J. Casey and R. Coult, "The Piercebridge (Co. Durham) Hoard of Mid-Third Century 'Antoniniani' and a Note on Elmer 593 (Postumus)," CH 3 (1977), pp. 72-77. Over a longer period of debasement (ca. 730 to ca. 770), analytical results combined with hoard studies "should help to place the varieties of sceattas in their correct chronological sequence," D. M. Metcalf, "Chemical Analysis of English Sceattas," BNJ 48 (1978), pp. 12-19, at p. 12.
- ¹⁰ C. Morrisson, J.-N. Barrandon and J. Poirier, "Nouvelles recherches sur l'histoire monétaire byzantine: Evolution comparée de la monnaie d'or à Constantinople et dans les provinces d'Afrique et de Sicile," JÖB 33 (1983), pp. 267–86.



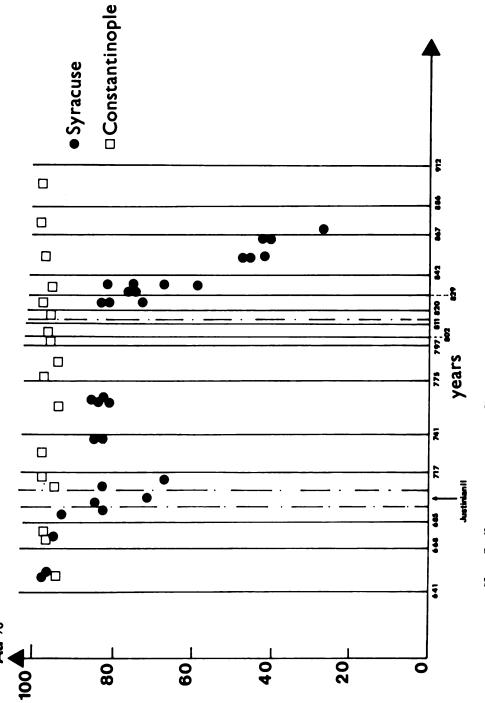


Fig. 2: Gold content of Byzantine Coinage in Syracuse from Constans II to Basil I, 642–879 (C. Mortisson, J.-N. Barrandon, and J. Poirier, JÖB 33 [1983], pp. 267–86)



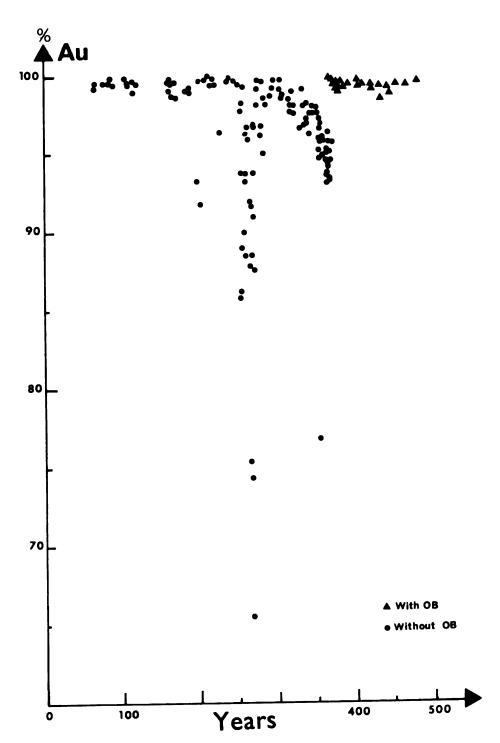


Fig. 3: Gold Content of Roman Coinage, 63-491 (CEB 2, p. 80, fig. 12)



Over a span of more than a century the Crusader bisantii saracenati struck in imitation of Fatimid dinars (whose precise dating has been the subject of many queries and still remains debated owing to their overwhelmingly immobilized character) also follows a downward evolution, curiously and perhaps not fortuitously parallel to that of the contemporary Byzantine hyperpyron. But debasement alone, although reliable as a main guide, is not to be trusted in all details of a relative chronological arrangement of the material, and its data have to be combined with the evidence from hoards and metrology to obtain a thorough classification, taking into account the complications created by the probable existence of two (or more) mints with different standards.¹¹

Over long periods or even short ones in other contexts, the application of studies of fineness must be more cautious. Let us consider the variations in gold content of Roman coins from 63 to 491 (Fig. 3): if the chronology were not known to us through coin legends and texts, the application of "the baser, the later" principle might lead to conflating, for instance, some Valerianus and Gallienus issues (253–68), fluctuating between 75% and 95% gold, with those of the inflationary decades between 346 and 368, which range from 76% to 98% around an average of 95%.¹²

In the Roman and medieval Mediterranean world the high level of refining techniques for precious metals permitted both the control of purity down to minute variations and, to a certain extent, the return to finer standards after a period of debasement. Evidence of such rigorous control is given by a study of the numismatic consequences of the Valentinianic laws of 366–67 which demanded that taxes should be paid not in coins but in refined ingots (non solidi...sed...idem in massa redacti, Cod. Theod. 12.6.13. In fact, analyses show that all issues after 368 (Fig. 4) well deserved being stamped ob(ryziaci) (refined) for they all contained more than 99% gold instead of the average 94% of the previous solidi of the same emperors. It is therefore clear that in Roman



¹¹ A. A. Gordus and D. M. Metcalf, "Neutron Activation Analyses of the Gold Coinages of the Crusader States," MIN 1, pp. 119-54.

¹² For data and comment, see J.-P. Callu, CEB 2, pp. 91–95.

¹³ M. Amandry et al., "L'affinage des métaux monnayés au Bas-Empire: les réformes valentiniennes de 364-368," NumAntClas 11 (1982), pp. 279-95.

coinage or in Roman-derived coinages, even limited variations in fineness, from 1% onwards, should be considered significant.¹⁴

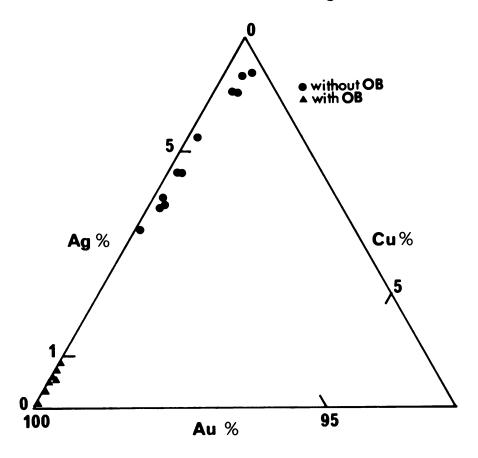


Fig. 4: Roman Gold Coinage before and after the Reform of 367/8 (CEB 2, p. 108, fig. 19)

14 It implies that the officials responsible were clearly aware of the slightest variations in fineness and that such variations, whether due to a slackening of the purity control or to the deliberate addition of less precious metal in the alloy, should be considered part of a monetary policy. Such technical and financial know-how is described in detail in the portrait of the Byzantine emperor Michael VII Ducas by Michael Psellus: "He understood every detail of finance exactly: its organisation and management; how much the treasury paid to each person and how much each paid back to the treasury; the production of coins and the equilibrium of a balance; excesses and deficiencies of weight, how the touchstone worked; and how many measures of pure material each of the pieces of stamped gold contained" (Chrono-



Evidence of a return to high values after a period of debasement is offered by the reform of Alexius I in 1092 which restored the Byzantine nomisma after two decades of catastrophic debasement. The reasons behind the choice of the "curious standard of 20 1/2 carats" instead of the previous 23 1/2 of the better gold coins of the early eleventh century have been looked for but, despite interesting conjectures, the question has been left unanswered.¹⁵ It can in fact be explained by simple monetary and technical factors, namely the adjustment to the mean value of coins from the first stage of the eleventh century debasement (cf. above, Fig. 1) and a simple reminting which avoided the loss of silver in the refining process.¹⁶ When studying either debasement or restoration processes in early periods, we must take into account the great limitations of the metallic stock of the time: discovery and exploitation of new mines or sources of fresh metal were extremely rare and are usually known through historical sources.¹⁷ The "normal" input of newly mined metal into the coinage can be estimated at some 1% per year which must have only made up for the loss incurred through wear and internal or external hoarding.¹⁸ Most of the time therefore, coinage manipulations operated on the existing stock of coins or plate and can-

graphia, E. Renauld, ed. and transl. [Paris, 1928], vol. 2, p. 173; the English translation of this excerpt is in BME, p. 241). Touchstone assay could measure fineness, according to Theophrastus and Pliny, down to 1/6 or even 1/12 of a carat (1/144, .68%, or <math>1/288, .34%), see R. Halleux, in CEB 2, p. 42, with references.

- ¹⁶ Hendy, p. 17: "It may tentatively be suggested that Alexius I was returning to the standard of fineness as introduced by Michael IV ... but even this connection, if accepted, still brings a solution to the original problem no nearer."
- 16 R. Halleux, "Méthodes d'essai et d'affinage des alliages aurifères dans l'Antiquité et au Moyen Age," CEB 2, pp. 153-54. In the cementation process, reminds Halleux, pp. 45-46, silver gets lost, totally or partially, being absorbed in the crucible. Alexius I was surely not in a financial position favorable enough to allow him to tolerate the loss of this 1/8th silver in the alloy. Even if the Byzantines already knew how to recover silver from the residuals of the operation (by mixing them with lead and proceeding to cupellation, a technique already mentioned in the west in the early twelfth century), it is likely that they would have preferred to avoid this costly process.
- ¹⁷ But see below, p. 204, for the previously unknown new gold resources of the later Roman empire in the second half of the fourth century.
- ¹⁸ For this estimate, see C. Morrisson and J.-N. Barrandon, "La monnaie d'or byzantine de Constantinople: purification et modes d'altération," CEB 2, pp. 148-52.



not be interpreted in such abstract terms as the adding of purer or baser isolated elements.¹⁹ The above example indicates how closely analytical studies are linked with the study of contemporary metallurgical knowhow and technical restraints. With silver coinages for instance, as we shall see below, it is very important to ascertain the percentage limit above which copper or any other element, whether major or minor, can be considered a voluntary addition in the alloy.

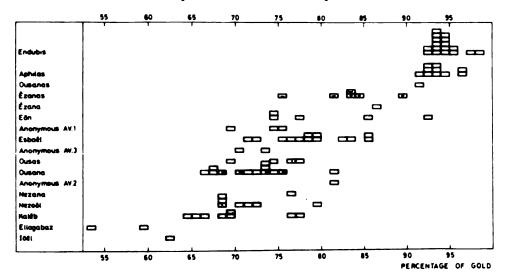


Fig. 5: Gold Content of Aksumite Coins (Oddy and Munro-Hay, MIN 1, p. 79, fig. 1)

In civilizations where the techniques of refining were not so elaborate (where gold was minted directly without preliminary cupellation), variations in fineness follow a different and simpler pattern. This may legitimate the approach followed in recent studies of the coinage of Axum (Fig. 5) which combined analyses of fineness with consideration of changes in metrology and typology to set out a new floating chronology for the Axumite kings, very few of whom are known through historical sources. The striking in the first stages (Endybis, Aphilas,



¹⁰ A similar view is expressed for Greek coinage by E. Will, "Les sources de métaux monnayés dans le monde grec," Numismatique antique. Problèmes et méthodes (Nancy-Louvain, 1975), pp. 97-102.

²⁰ W. A. Oddy and S. C. Munro-Hay, "The Specific Gravity Analysis of the Gold Coins of Aksum," MIN 1, pp. 73–82; W. Hahn, "Die Münzprägung des Axumitischen

Ezanas Christian and pagan) on blanks of native gold may explain the wide range in issues of the same reign (Ezanas: from 90% to 75%; the Christian types which come logically later, being surprisingly more pure than the earlier, pagan ones). Such variations, which would entail much overlapping of issues, still leave many chronological distinctions a matter of debate.²¹ If our hypothesis is proved by further research to be well founded, as the late appearance of lead from King Wazenas onwards in Hahn-Mauterer's microchemical analyses seems to indicate,²² there will be no point in looking for some detailed chronological evolution in the first stages of Aksumite debasement since variations in the composition of the gold ingots used could easily follow a quite erratic and unpredictable scheme.

Similar difficulties have been encountered in a recent study of midninth century Northumbrian coinage. The decline of the alloy from 40% silver in the 820s to 10% or eventually 2–3% in 867 is quite clear, but the wide band of fluctuation found within reigns is not easily interpreted—a change in the intended standard and hence a chronological implication and/or wide tolerances at the mint. The fact that such discrepancies in fineness (here the silver content) may be observed within die linked or closely related groups seems to suggest that the latter should be the case but Metcalf points out that these discrepancies (of some 10% in absolute values) are much lessened when the other white metals of the alloy (especially tin) are considered as well. Despite

Reiches (Mit Katalog, metallurgischem und theologischem Anhang)," LNV 2, pp. 113-80. In Anhang 1, "Zur metallurgischen Zusammensetzung der axumitischen Goldmünzen," pp. 145-50, Hahn summarizes metallurgical data for 20 gold coins subjected to microchemical analyses of streaks (by R. Mauterer, see the references cited, p. 399, 9-11) and 7 through proton activation, and also presents microchemical analyses of 19 silver Aksumite coins; further analyses are to be published in MIN 2.

- at A recent survey has been published by E. Godet, "Bilan de recherches récentes en numismatique axoumite," RN (1986), pp. 174-209. Another series of results has been announced by S. Munro-Hay and W. Hahn, whose interpretations differ, in JNG.
- For the significance of lead values as markers of the voluntary adding of silver into gold alloy, see below, p. 200.
- ²⁸ G. R. Gilmore and D. M. Metcalf, "The Alloy of the Northumbrian Coinage in the Mid-Ninth Century," *MIN* 1, pp. 83-98, and "Consistency in the Alloy of the Northumbrian Stycas: Evidence from Die-Linked Specimens," *NC* 1984, pp. 192-97.



these difficulties, the overall trend and the relative chronology of the series does not seem to be put in doubt by these results.²⁴ The same is true of the newly discovered Byzantine silver coins of Rome (ca. 651–ca. 772): the decline in the silver content has helped establish a chronology partly confirmed by other numismatic and historical criteria. Among the few specimens of the same issues in this series, discrepancies can be higher than 10% in absolute values, but when the average figures are considered, the general classification remains valid.²⁵ This indicates how desirable it is to collect as much data as possible to enable a statistical treatment which overcomes, at least partly, these kinds of difficulties.

One would also expect analyses to contribute toward establishing some kind of relative sequence in other coinages without a precise historical and chronological background. This is the case with Celtic gold coins from western Gaul which we have recently analysed. No really "pure" coin exists (there is always 1% or 2% silver which would have disappeared if the metal had been refined) and the earliest series of these imitations of Macedonian philippoi are struck with unrefined ore whose gold content ranges from 98% (BN 4837) to 88% (BN 6424). These may be contemporary issues with different gold sources and it is only with more debased series (below 85% gold) that we reach firmer ground. But even then, fineness alone is not enough to establish a sequence and all major elements as well as some trace elements must be taken into account.

Practically this means that specific gravity alone is not sufficient and that it can only be used as a complement in association with other non-destructive methods capable of measuring not just one but at least three major elements. Some of these methods, such as micro-sampling

- ²⁴ See MIN 1, p. 87, fig. 1: the range of silver values for successive kings and the more or less contemporarry archbishops of York do not show too much overlapping, and the decline for the archbishops' coins is parallel to that of the kings.
- ²⁵ M. D. O'Hara, "A Find of Byzantine Silver from the Mint of Rome for the Period A.D. 641–752," SNR 64 (1985), pp. 105–40; C. Morrisson and J-N. Barrandon, "La trouvaille de monnaies d'argent byzantines de Rome (v11^e-v111^e siècles): analyses et chronologie," paper presented at the 10th International Numismatic Congress, London, 8–12 September 1986.
 - J. N. Barrandon, work in progress, intended as CEB 4.



(Gordus, Mauterer microchemical method, etc.)²⁷ or the Barrandon-Poirier portable XRF apparatus,²⁸ which can be used on the spot, do not involve taking coins out of a museum and can be done on the premises, enabling large-scale surveys of a series by analyzing most of major elements and sometimes detecting minor or trace ones.

PROCESSES OF DEBASEMENT

Major constituents are usually defined as those which amount to more than a few percent, trace elements being those present in the alloy in minute quantities, that is to say less than about .5%. This quantity criterion, however, is not to be applied with simplicity and innocence. The historian's main interest is to know in each coinage under study how to distinguish between impurities associated with one of the components in the alloy and metals deliberately added to it by the moneyers, whether in a debasement process or to attain a stable composition within a certain monetary system, or simply because of technical restraints.

Consideration of metallurgical techniques of the time is essential to this aim. Thus it has been shown by McKerrell and Stevenson relying on experiments by Tylecote²⁹ that refining silver by cupellation reduces

- Methods, pp. 127-48, led to many studies in various fields such as Sasanian silver plate and coinage, Umayyad silver, Byzantine gold and silver issues, Crusader besants, sixteenth century European silver, etc. (see below, nn. 49-50, 52). For references to R. Mauterer microchemical method, see above, n. 20.
- This portable apparatus has been designed by J.-N. Barrandon and J. Poirier. They have devised a method of absolute calibration which overcomes the difficulties previously arising from the need to have all the possible alloy standards reflected in the range of the sample (J. Poirier, "Contribution à l'analyse de l'or antique. Application aux monnayages du monde méditerranéen du 11° au x10° siècle," Ph. D. diss., Orléans, 1983). It has been applied to the study of Vandal silver (C. Morrisson, C. Brenot and J.-N. Barrandon, "L'argent chez les Vandales: plats et monnaies," L'argenterie romaine et paléobyzantine, Table ronde C.N.R.S., 1983 (Paris, forthcoming) and of late Byzantine gold (C. Morrisson, J.-N. Barrandon and S. Bendall, "Protonic Activation and XRF Analysis: An Application to the Study of the Alloy of Nicaean and Palaeologan Issues," MIN 2, forthcoming).
- ¹⁹ H. McKerrell and R. B. K. Stevenson, "Some Analyses of Anglo-Saxon and Associated Oriental Silver Coinage," *Methods*, pp. 195–209, at pp. 198 and 204.



impurities, irrespective of their original concentration in the ore, to the following levels: lead (Pb) and bismuth (Bi) to .5 to 1%, tin (Sn) and zinc (Zn) to \(\lambda.1\%\), copper to .2 to .5%. When copper is found in silver coinage or plate in higher percentages, it is virtually certain to have been deliberately added to the alloy for technical or financial purposes. Roman plate for example contains a modal 5% copper³⁰ and Byzantine or related plate of the sixth century some 3%, whereas even the most refined silver coinage (pusulatum) of the fourth to fifth centuries still contains about 1% copper.³¹ It is probable that, in the case of Roman plate, this was intended to harden the metal and make casting easier.³²

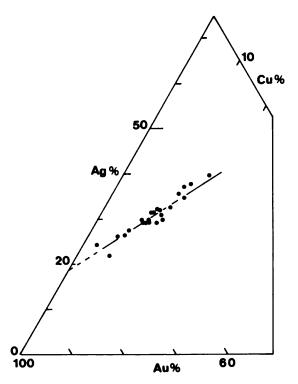


Fig. 6: Composition of Some Celtic Coinages from Central Gaul



³⁰ This value has been calculated on analyses of some 50 objects from Boscoreale (M. Menu, L. P. Hurtel and T. Bertoud, "Etudes analytiques d'objets en argent romains: bilan et perspectives," *L'argenterie romaine et paléobyzantine*, Table ronde C.N.R.S., 1983 (Paris, forthcoming).

³¹ Amandry et al. (above, n. 13), pp. 283-84; Morrisson et al. (above, n. 28).

³² Menu et al. (above, n. 30).

Even analysis limited to the three major elements in a gold alloy is of primary importance since it provides not only the expected data on fineness and intrinsic value but also permits, in the sequences of a debased series, an investigation of the process of change by calculating: 1) the initial silver concentration in the gold alloy at the beginning of the debasement process; and 2) the silver/copper composition of the added alloy, whether from coins or from pure metals, responsible for the debasement. In three Celtic coinages from central Gaul (one from Sologne and two others from Berry, the "Bourges" type and the "thunderbolt" type) the perfect alignment of the data show their gold content to have decreased (Fig. 6), starting from a native gold ore with some 18% silver, to which was added a silver/copper alloy (or coins) in roughly equal proportions (53% silver, 47% copper). Further study of the composition of Celtic silver coinages of the area could eventually confirm that what was added was coin and could thus offer interesting clues for relative dating of the series.33

The debasement of the Roman silver denarius in the second to third centuries A.D. was a process already well known through the classical studies—based on chemical analyses—of Le Gentilhomme, Guey, and Condamin and Picon,³⁴ and the clear descending fineness graph of the silver and later billon coin left only problems of detail unsolved. But a further study of all major elements in the billon series (the so-called antoninianus) reveals a greater change in the nature of the alloy than a simple change of the silver/copper ratio: the decline of the silver content from some 35% in the mid-third century to 5% or less in the 260s is first achieved simply by adding copper to the alloy; later, from 253 onwards and very strongly from 260–63, by an increase in the lead and tin contents (Figs. 74 and 7B).³⁵ This gives insight into the process of

- 38 J.-N. Barrandon, work in progress, intended as CEB 4.
- ²⁴ P. Le Gentilhomme, "Le jeu des mutations de l'argent au m' siècle. Étude de l'altération de la monnaie romaine de 215 à 275," *Mélaux et Civilisations* 1 (Paris, 1946), pp. 113–27; and "Variations du titre de l'antoninianus au m' siècle," *RN* 1962, pp. 141–46; J. Guey, "L'aloi du denier romain de 177 à 211 après Jésus-Christ (étude descriptive)," *RN* 1962, pp. 73–140; J. Condamin et M. Picon, "Etude de quelques problèmes analytiques propres aux monnaies antiques (argent, cuivre)," *RN* 1964, pp. 69–89.
- ²⁵ J.-N. Barrandon et al., "De la dévaluation de l'antoninianus à la disparition du sesterce: essai de modélisation d'un phénomène monétaire," *Statistique et numismatique*, C. Carcassonne and T. Hackens, eds., PACT 5 (Strasbourg, 1981), pp. 381-90.



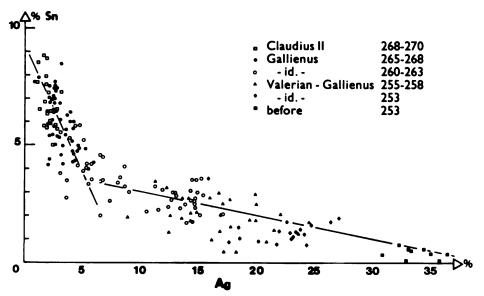


Fig. 7a: Variations of Tin Content Relative to Silver Content of Antoniniani, ca. 210–270

(Barrandon et al., PACT 5, p. 383, fig. 1)

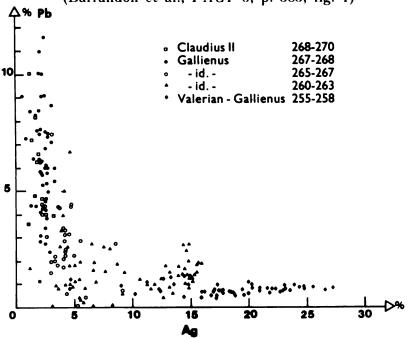


Fig. 7B: Variations of Lead Content Relative to Silver Content of Antoniniani, ca. 210–270 (Barrandon et al., *PACT* 5, p. 384–84, fig. 2)



debasement which was conducted by remelting sestertii which contained, from the time of Marcus Aurelius onward, less and less zinc and more and more of these two metals. The analytical results help to estimate, through model making, the considerable importance of the growth of the monetary stock (there must have been between 5 times and 15 times as many antoniniani struck in 270 as in 238). They also explain the consequences of this reminting on the currency, namely the progressive disappearance of second century sestertii from circulation in the second half of the third century and the severe decline or even cessation of their striking in the mint of Rome.

A similar study of the contemporary antoniniani from the military mints of Milan and Siscia³⁶ shows a different pattern for the tin/silver and lead/silver ratios under Claudius Gothicus than that found in the central mint. It can be deduced that the production of these mints, much lower in quantity than production in Rome, involved less (or in Siscia no) reminting of sestertii while its fineness remained relatively higher. Such a relaxed situation concerning what had become a highly fiduciary coinage explains why the monetary reform of Aurelian in 274 required both reducing to uniformity the fineness of the billon coinage throughout the empire and marking the new denomination with the fractional KA or XXI on pieces with 5% silver, i.e. 1/20th, and XI on pieces with 10% silver—giving their relation to a pure silver unit.³⁷ It should be noted that in this latter case, the analyses have enabled historians to decipher the meaning—heretofore misinterpreted as a value expressed in bronze—of a mark of value.

Analysis of major elements alone is not always sufficient to investigate the debasement process and its implications for monetary history. Some trace elements can serve as markers or fingerprints of the major



³⁶ C. Brenot, H. Huvelin, and J.-N. Barrandon, "Le métal des antoniniani de Claude II: Un aspect des rapports entre l'atelier central de Rome et les ateliers militaires de Milan et de Siscia," *La Zecca di Milano*, Atti del Convegno internazionale di studio, Milano, 9-14 May 1983 (Milan, 1984), pp. 173–88.

³⁷ J.-P. Callu, C. Brenot, and J.-N. Barrandon, "Analyses de séries atypiques (Aurélien, Tacite, Carus, Licinius)," *NumAntClas* 8 (1979), pp. 241-54; detailed results on Claudius' and Aurelian's coinage from the eastern mints will be published soon.

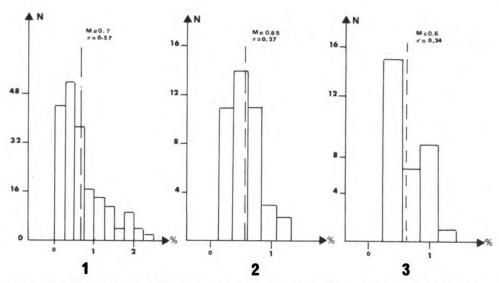
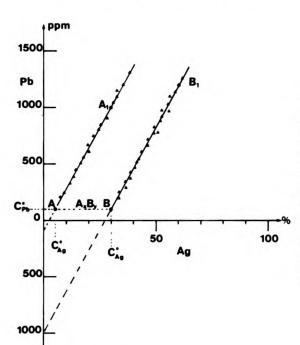


Fig. 8a: Frequency Distribution of Lead Content in Samples of Various Ancient Silver Coinages: 1. Archaic Greek Coinage from Athens; 2. Drachms from Massalia; 3. Roman Antoniniani



When silver is present in native gold, the lead content remains constant whatever the percentage of silver (gold, A to B). When silver is deliberately added to gold, the lead content increases correlatively with the percentage of silver added (gold, A to A1, B to B1, depending on the percentage of silver in native gold). Such a lead/gold diagram enables one to differentiate native gold from alloyed gold (for example, native gold B and alloyed gold A1, which have the same silver content).

Fig. 8b: Theoretical Scheme of Variation of Lead Content According to the Nature of Silver Present in Alloy (CEB 2, p. 34, fig. 11)



elements with which they are usually associated as impurities. They contribute to reconstructing how debasement was carried on concretely, or to identifying its consequences on the currency, or, to put it in other terms, to seeing the techniques of alloy production and to follow the eventual remintings.

Lead for instance is a good marker of silver, and a large part of the silver used in the Roman world was extracted from galena; even refined silver coinages still contain some .6 to .7% lead (Fig. 8A). We have shown³⁸ that lead therefore could help to distinguish within debased gold coinages those where silver is simply present as an "impurity" of gold from those where the white metal has been deliberately added to the alloy (Fig. 8B). When silver enters the alloy together with gold, the percentage of lead remains constant whatever the amount of silver (which may reach as much as 30% to 34% in gold ores).³⁹ This is a form of debasement, limited to using non-refined gold, which is observed in the earlier stages of the Byzantine debasement in the eleventh century, as well as with the Crusader's bisantii in the twelfth century (Metcalf's phase 1 and 2, but excluding BY 27d).40 As soon as silver is added deliberately to the alloy, the lead content begins to rise along a correlated line whose slope corresponds to the lead amount measured in the contemporary Byzantine silver series which were used in that reminting (Fig. 9). The lead curve (see Figs. 8A and 8B) which always assumes the same shape in passing from one form of debasement to another, but with variable absolute values, has to be carefully examined by the scholar in every debasement process.

Such a distinction is not a useless nicety for specialists: it explains to numismatists the late occurrence of silver debasement in the eleventh century, which had nothing to do (as was previously supposed) with the "silver famine" in the east or with keeping pace with the decline of gold. This was due only to the use of one precious metal to debase the other, leading to the rapid succession *en cascade* of the two processes of



²⁸ J.-N. Barrandon and J. Poirier, "Les méthodes d'analyse des monnaies d'or," CEB 2, pp. 33-34.

³⁹ See J.-N. Barrandon and J. Poirier (above, n. 38), p. 35, table 2, and the Appendix, below, for data on the composition of some native gold.

⁴⁰ Unpublished proton activation analyses of J.-N. Barrandon.

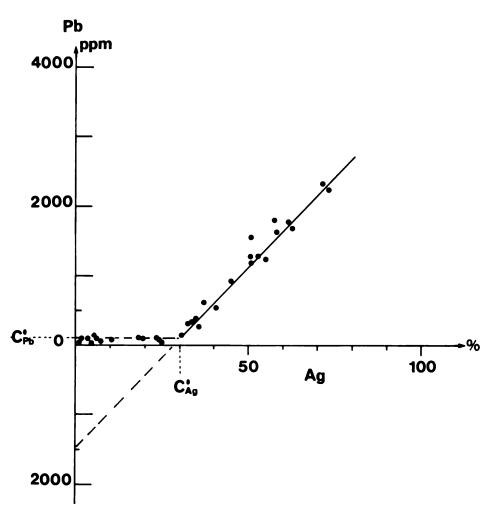


Fig. 9: Lead Content of Byzantine Gold Coins, 491–1081 (CEB 2, p. 135, fig. 27)

The lead curve shows that debasements containing up to 30% silver involved non-refined native gold. The debasement of the 1070s was due to the addition of silver.

alteration—silver was added to gold, and copper to the newly struck silver, which in turn in the next phase was added to gold. It explains moreover to the historian the very different nature of the two stages and kinds of debasement: in the first, the adding of non-refined gold to the alloy, allowed an important rise of the monetary stock for a limited



decline in fineness (a drop to 75% gold permits, theoretically, 4 to 5 times the production); in the second, if the same rise in the quantities struck were required, the drop would have been much more severe, bringing the purity down to only 22% gold (i.e. some 5 1/4 carats). That is roughly what happened in Byzantium: when Romanus IV began to adulterate its nomismata with silver coin in order to finance the recruiting of a huge army against the Seljuk sultan Kilidj Arslan, he initiated the most catastrophic crisis of the bezant, which fell from under 70% to less than 10% within 20 years time. The military disasters and their financial consequences were already known to chroniclers of the time (e.g. Bryennios) as the causes of the decline of the celebrated gold coinage, but the decline was undoubtedly aggravated by these metallurgical processes.⁴¹

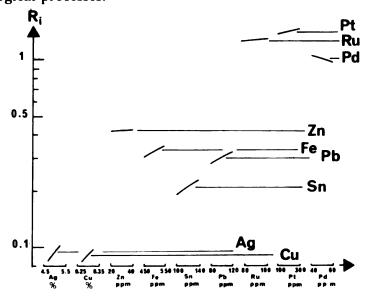


Fig. 10: Refining Ratio of Principal Minor and Trace Elements in a Gold Monetary Alloy According to Their Initial Percentage (Poirier, Ph. D. diss., p. 176, fig. 28)

Left, the semi-logarithmical scale shows the ratio between the two percentages (before and after refining); below, the minor and trace elements are shown according to their approximate range in actual coins. Platinum and related elements (Ru, Pd) are unaffected by the refining process: the ratio value (R_i) remains approximatively 1.

⁴¹ C. Morrison and J.-N. Barrandon (above, n. 18), pp. 133-48, with numismatic and historical references.



Increasing the monetary stock does not always result in such ill consequences, and inflation is not to be confused with debasement. Other trace elements here come into question which allow us to avoid such a misinterpretation and even to spot inflation in the absence of any other clear sign of such a phenomenon. As is well known, the only trace elements which remain unchanged in the refining process of gold are those of the platinum family — platinum (Pt), palladium (Pd), and ruthenium (Ru), Fig. 10 — whereas for silver the corresponding trace elements are iridium (Ir) as well as gold and bismuth.⁴² As well as helping to identify the possible origin of monetary gold, platinum and

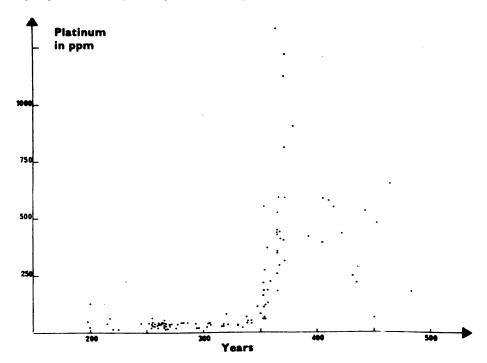


Fig. 11: Platinum Content in Roman Gold Coins, 198-491 (CEB 2, p. 93, fig. 15)

⁴² P. Meyers, "Activation Analysis Methods Applied to Coins: A Review," *Methods*, pp. 183–93, at p. 190: "Different concentration levels, especially of iridium, also of iron and mercury and sometimes of zinc, indicate different origins of ore materials"; H. McKerrell and R. B. K. Stevenson, "Some Analyses of Anglo-Saxon and Associated Oriental Silver Coinage," *Methods*, pp. 202–4, on "the use of gold and bismuth as likely parameters for identification of silver sources."



related elements, when a significant change in their proportions is observed, indicate a change in the supply and functioning of the mints. Inflation in the fourth century has long been well known to historians who discerned in texts and inscriptions the long-term decline of the denarius currency and explained it through excessive minting without calling in any of the circulating copper coinage. 48 The phenomenon was thus essentially associated with the petty currency. But the platinum graph (Fig. 11) shows that a distinct change occurred around 346, when the proportion of platinum in Roman gold coins suddenly began a spectacular rise from some 30-40 ppm to nearly 900 ppm in the late fourth century and stabilized around 400 ppm in the fifth century. The very limited decrease in fineness (only 2 points, from an average 97% to some 95%) in the first two decades of the period, before 368, would not have otherwise attracted much attention. But the platinum rise proves that a new source of metal (with a higher platinum content than the previous ones) was being used in a proportion large enough to modify the metallic composition of the whole stock which was probably multiplied ten times in fifty years. 44 A detailed study of the platinum increase mint by mint (Fig. 12) shows it to have been higher and to have begun earlier in Thessalonica and confirms that this new metal might have originated in the Thracian and Macedonian area, principally in the upper Vardar valley.45

SOURCES OF ORES

This brings us to the last and most difficult point: the information which analyses can give on the sources of metal, a question which is of considerable interest to the historian. Even if there exist "marker"

- ⁴³ A. H. M. Jones, *The Later Roman Empire*, 284-602 (Oxford, 1964), vol. 1, pp. 439-43, and "Inflation under the Roman Empire," *EconHistRev* 1953, repr. with emendations in *The Roman Economy*. Studies in Ancient Economic and Administrative History (Oxford, 1974), pp. 187-227.
 - 44 J.-P. Callu et al., "Aureus obryziacus," CEB 2, p. 94-95.
- ⁴⁵ J.-P. Callu and J.-N. Barrandon (C. Brenot and J. Poirier colls.), "L'inflazione nel iv secolo (295-361): il contributo delle analisi," Società Romana e impero tardoantico 1: Instituzioni, ceti, economie, A Giardina, ed. (Bari, 1986), pp. 559-604 and 801-14.



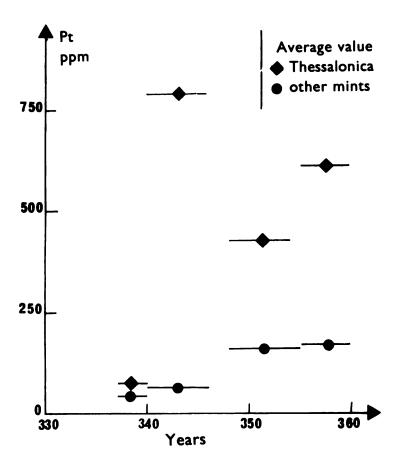


Fig. 12: Evolution of Platinum Content in Roman Gold Coins from Thessalonica and Other Mints, 335–360

trace elements which the reminting and refining processes leave unaffected, the mixing of alloys or metals of different origin in the melting pot obscures distinctive characteristics. Relating monetary alloys and metals to their possible sources is not an easy task for two reasons: 1) frequent remintings of metals from different sources entail a more or less rapid dilution of the characteristic trace element rates;⁴⁶ and 2) the available data on the general composition, including trace elements, of ores of precious metals from known sources are still very patchy, and

⁴⁶ See above, pp. 200-202, for an example of this process.

their increase should be a desideratum of further research (see Appendix for information supplementing the analyses in CEB 2).

The gold and bismuth pattern in silver coinages has been used in some cases to identify the ore's possible sources: McKerrell and Stevenson studying Anglo-Saxon pennies from Scottish hoards have traced the smelting of oriental coins in the late tenth century.⁴⁷ Kraume and Hatz have surveyed Otto-Adelheid pfennige and other German silver coins of the tenth and eleventh centuries and related them to their possible sources of metal.⁴⁸ Meyers and Gordus used the different gold percentages in the alloy to distinguish between groups of mints for Sasanian or Umayyad silver.⁴⁹ Gordus and Metcalf applied the same method to delineate the different origins of Byzantine miliaresia and Serbian silver coinage.⁵⁰

But more often the variety of sources of coins or metals mixing together in the circulation limits severely the possibility of identification to an area close to the source: N. Lowick and R. Cowell, using gold and bismuth as markers of the Panjir mines' silver (with high bismuth and low gold content), have tried to follow its diffusion from the local mint at the mine itself to surrounding mints, but could not trace it further than Balkh in the Hindukush.⁵¹ And in their attempt to trace the possible influx of Potosi silver in southern European coinages of the late sixteenth century, E. Le Roy-Ladurie, A. and J. Gordus and D. Richet could not detect it in Catalan and French issues: that is not to say that it did not reach these mints, but only that it did so in quantities too small to modify the gold trace pattern.⁵²

- ⁴⁷ H. McKerrell and R. B. K. Stevenson (above, n. 42), pp. 202-8.
- ⁴⁸ For detailed references see D. M. Metcalf, "Analyses of the Metal Contents of Medieval Coins," *Methods*, esp. pp. 413–16.
 - 49 Gordus (above, n. 27), pp. 127-48.
- ⁵⁰ A. A. Gordus and D. M. Metcalf, "The Metal Contents of the Early Serbian Coinage," *RBN* 115 (1969), pp. 57–82, and "The Alloy of the Byzantine Miliaresion," *HBN* 24/26 (1970/72), pp. 9-36.
- ⁵¹ Paper delivered at the BM and RNS Symposium on the Application of Scientific Techniques to the Coinage of Europe and the Mediterranean World (A.D. 500–1500), April 1984, MIN 2 (forthcoming).
- 68 A. and J. Gordus, E. Le Roy-Ladurie, and D. Richet, "L'apparition de l'argent des mines du Potosi dans les monnaies françaises et espagnoles des xvi et xvii siècles," *BSFN* 27 (1972), pp. 220–26, and "Le Potosi et la physique nucléaire," *Annales. E.S.C.*, December 1972.



Lead isotope ratios present the same advantage of being unaffected by refining processes but their interpretation is subject to the same difficulties mentioned above. They have been applied mainly to the study of silver alloys and of some copper ones. The study of the possible sources of Greek archaic silver from the Asyut hoard by Gale, Gentner and Wagner can be considered a good example of the results which can be obtained through combined lead isotope and chemical analyses.⁵³ The results are very reliable as long as they are confined to coinages stemming from primary sources of silver (as the archaic ones may have done) or drawing on a predominant source, such as the Laurion for fourth century Athenian owls. Difficulties arise as soon as metals from different sources are mixed,⁵⁴ and there is no reason to expect relief based on either current or immediately foreseeable analysis techniques.

Lead isotope ratios have not yet been used for the identification of gold ores since the very low level of lead traces in gold (some 50 to 100 ppm) creates great technical difficulties when measurements have to be carried on the smallest possible micro-samplings. An attempt in this field has, however, begun in the Bureau de Recherches géologiques et minières (Orléans) and will cover both ores and coins.

The importance of the results obtained through the application of analytical methods for numismatics and monetary history cannot be doubted as we hope to have shown here. There is still much to be gained in series yet unexplored, in the refinement of precision and reliability of figures, or in pioneer areas like the search for metal sources. But we need to be aware—staying mid-way between hyper-confidence and hyper-criticism—of the limitations imposed on such analyses by the way mints and currency functioned in different historical periods.



⁵³ N. H. Gale, W. Gentner and G. A. Wagner, "Mineralogical and Geographical Silver Sources of Archaic Greek Coinage," MIN 1, pp. 3-49.

H. Nicolet-Pierre, J.-N. Barrandon, and J.-Y. Calvez, "Recherches sur la composition métallique des Wappenmünzen," RN 1985, pp. 23-44, have confirmed the well-established relation between archaic owls and Laurion silver but have also shown that the composition of Wappenmünzen is not homogeneous. Some of them (obols of the wheel group as well as a Gorgona) were struck on Laurion silver; this has interesting chronological consequences, namely that the issue of Wappenmünzen obols continued after the introduction of the owl coinage.

APPENDIX

DATA ON THE COMPOSITION OF GOLD ORES

		Percentage					
Country and Place		Au	Ag	Cu	Fe	Other Metals	
Placer gold							
	Africa						
Senegal	nuggets	94.6	5.85			Pt: 0.15	
	nuggets	86.8	11.8	0.9			
	powder gold	84.5	15.3	0.2			
Guinea	nugget from the Ashanti country	90.0	9.55	traces	traces		
	Asia						
Afghanistan		96.97	3.02				
Burma	Schusse-Gyeng	92.0	8.0		2.9	(Cu + Fe)	
	River Tayoy	87.9	9.2			,	
India	Jashpur—nugget	94.64	5.15				
	Rabkad, Udaipur	91.7	3.6		4.7	(Cu + Fe)	
	Wynaud district	91.0	8.7				
Siberia	Boruschka, Nijni-	83.85	16.15				
	Tagilsk district						
	Boruschka	91.36	8.35		0.29 (Cu + Fe)	
	Boruschka	94.14	5.23		0.39 (Cu + Fe)	
	Perroe Pawlovsk, near Beresow	92.6	7.08	0.02	0.03		
	Alexander Andrejewsk, near Miosk	87.4	12.97	0.09			
	Europe						
Great Britain	River Mowddach, Wales	94 Q	14.7	0.34		5:02 . 0 4	
Great Dritain	Kildonan Burn, Suther-		14.7	U.J4		Si02 : 0.4 Si02 : 0.4	
	land, Scotland	01.1	10.4			3102: 0.4	
Italy	Po valley	92.0	4.5	3.5			

^{*} Supplement to the analyses published in CEB 2, p. 35.



		Percentage				
Co	ountry and Place	Au	Ag	Cu	Fe	Other Metals
Reef gold						
	Asia					
India	Wynaud district	86.9	11.0		2.1	
Siberia	Hiel	87.4	12.6			
	Berezow	91.9	8.0	0.09		
	Berezow	93.8	5.9	0.08	0.04	
		86.5	13.2		0.3	
	Europe					
Bohemia	Emle	91.3	8.4	0.02	0.16	
Transylvania	Verespotok	60.5	38.75	0.75		
	<u>-</u>	64.8	35.2			
	Füses	84.9	14.7			
Ural		70.9	28.8	0.8		

PLATES

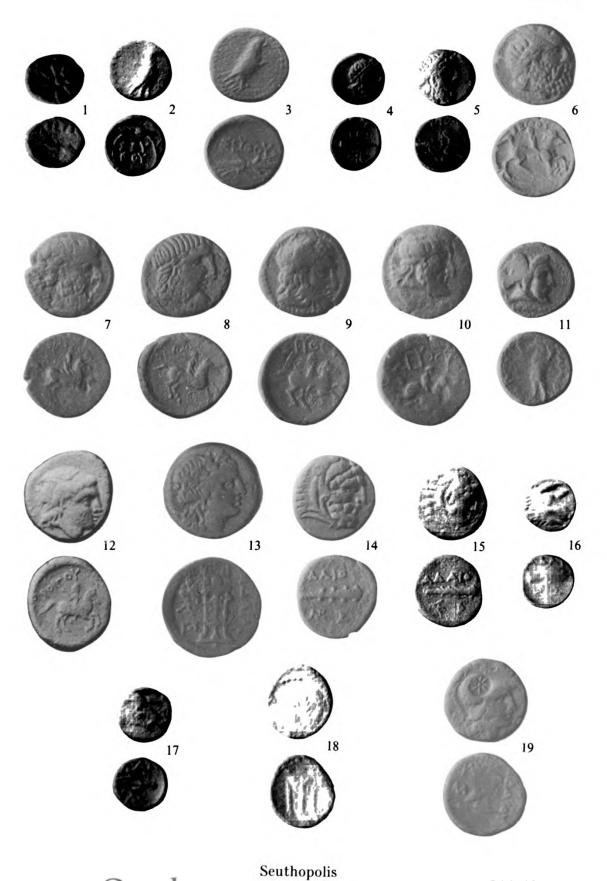
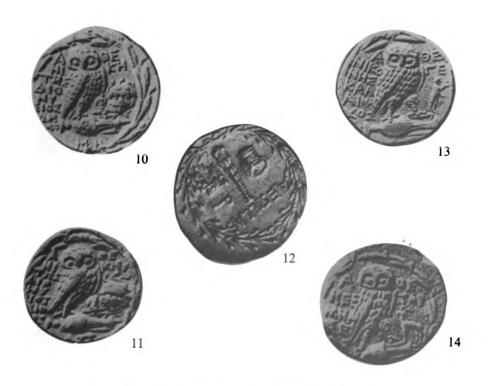


Plate 2



Plate 3





New Style Athens and Aesillas the Quaestor

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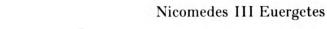
Plate 4





Plate 6



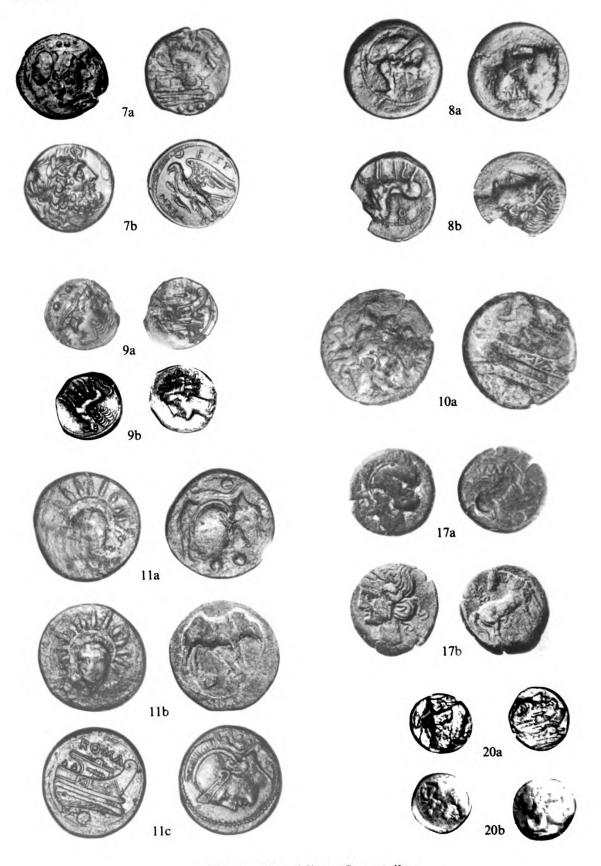






Roman Republican Overstrikes

Plate 8

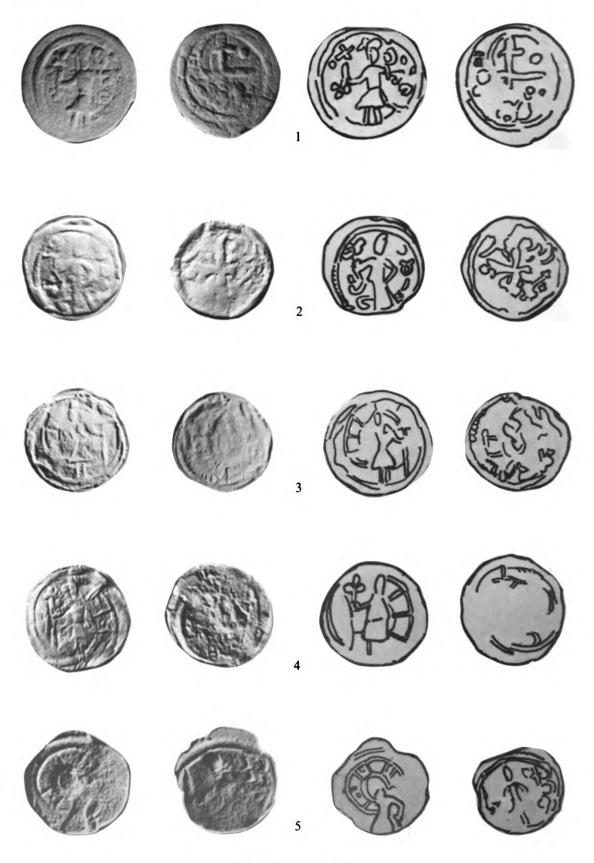


Roman Republican Overstrikes





Plate 10











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THE AMERICAN NUMISMATIC SOCIETY

MUSEUM NOTES 33



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NEW YORK
1988



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A GREEK ARCHAIC SILVER HOARD FROM SELINUS

(Plates 1-15) Carmen Arnold-Biucchi, Leslie Beer-Tobey, and Nancy M. Waggoner

In the fall of 1985, a hoard containing 165 silver coins, four fragmentary silver ingots, and a small silver dump was found reportedly in the vicinity of ancient Selinus (Selinunte) on the southwestern coast of Sicily. The coins, all from the archaic period, represent eight different mints, making this deposit the earliest of its kind from Sicily. The contents may be summarized as follows:

Metapontum, 2 (Plate 1, 1-2); Poseidonia, 1 (Plate 1, 3); Sybaris, 5 (Plate 1, 4-8); Himera, 1 (Plate 1, 9); Selinus, 35 (Plates 1-4, 10-44); Abdera, 1 (Plate 4, 45); Aegina, 81 (Plates 4-10, 46-126); Corinth, 39 (Plates 10-12, 127-65); Dump, 1 (Plate 12, A); and Ingots, 4 (Plates 12-15, B-E).

The coins are catalogued by mint in geographic distribution from west to east and a commentary follows each mint listing. A comprehensive comparison with other relevant hoards may be found in the discussion on pp. 28–35 with reference to the hoard chart. Obverse die links are denoted in the catalogue by connecting lines to the left of the entry number; connecting lines to the right indicate reverse linkage.¹

¹ The authors wish to thank Jonathan H. Kagan for bringing this deposit to their attention. They are also indebted to Cathy Lorber and Steve Rubinger of Numismatic Fine Arts for permitting photography and recording of the hoard before dispersal. Photographs of the uncoined silver were kindly provided by Martin Price.



ABBREVIATIONS

ACGC	C. M. Kraay, Archaic and Classical Greek Coins (London, 1976)
Asyut	M. Price and N. Waggoner, Archaic Greek Silver Coinage: The Asyut Hoard [IGCH 1644] (London, 1975)
СН	M. Jessop Price, ed., Coin Hoards 1-7 (London, 1975-85)
IGCH	M. Thompson, O. Mørkholm, C. M. Kraay, An Inventory of Greek Coin Hoards (New York, 1973)
Isthmia	The Isthmia 1954 Deposits, IGCH 11
Himera	C. M. Kraay, The Archaic Coinage of Himera (Naples, 1984)
Matala	R. Ross Holloway, "An Archaic Hoard from Crete [IGCH 1] and the Early Aeginetan Coinage," ANSMN 17 (1971), pp. 1-21
May	J. M. F. May, <i>The Coinage of Abdera</i> (540–345 B.C.) RNS Special Publication 3 (London, 1966)
McClean	S. W. Grose, Catalogue of the McClean Collection of Greek Coins Fitzwilliam Museum 2 (Cambridge, 1926)
Noe	Sydney P. Noe, <i>The Coinage of Metapontum</i> , pts. 1 and 2, revised by Ann Johnston (New York, 1984)
Ravel	O. E. Ravel, Les "Poulains" de Corinthe 1 (London, 1936)
SNGDelepierre	Collection de Jean et Marie Delepierre, Cabinet des Médailles (Paris, 1983)
South Anatolia	E. S. G. Robinson, "A Hoard of Archaic Greek Coins from Anatolia" [IGCH 1177], NC 1961, pp. 101-17
Taranto	E. Babelon, "Trouvaille de Tarente" [<i>IGCH</i> 1874], <i>RN</i> 1912, pp. 1-40



SOUTH ITALY AND SICILY

METAPONTUM

Noe: Class 1, 550-540 B.C.

Obv. MET Seven-grained ear of barley with folioles at the base. Dotted border.

Rev. Obv. type incuse.

One-third staters.

- 1. 2.51. Rev. MET in relief. Dies of Noe 30.
- 2. 2.66. Rev. no inscription. Dies of Noe 31.

The two incuse one-third staters of Metapontum included in the Selinus hoard are of the seven-grained ear type with two bractlets or folioles engraved at the end of the ear. They are Noe class 1, 30 and 31, with the three first letters of the ethnic MET to the left of the ear on the obverse, but very faint on 2; 1 also has the same three letters in relief to the right of the ear on the reverse. The fractional coinage of Metapontum was very important from the beginning. A precise classification and dating is in most cases impossible, as Noe remarked and Ann Johnston confirmed.² The one-third staters 1 and 2, however, undoubtedly belong with the staters of Noe class 1 because of the presence of bractlets, characteristic of the group. Noe basically followed Head's chronology in *Historia Numorum* which allowed some forty years before the destruction Sybaris in 510 B.C. for the first incuse phase with spread flans at Metapontum and Sybaris. There is no hoard evidence for this early period since no find in the west predates 520 B.C., and

Margaret Thompson's valuable comments upon reading the original manuscript are gratefully acknowledged. While the three authors bear joint responsibility for the general conclusions proposed herein, the preparation of the overall catalogue and commentary has been divided among Carmen Arnold-Biucchi (the mints of South Italy and Sicily), Lesly Beer-Tobey (Aegina), and Nancy Waggoner (Abdera, Corinth and the uncoined silver).

² Noe, p. 46. Note that this is the 1984 reprint of S. P. Noe, *The Coinage of Meta-pontum*, pt. 1, ANSNNM 32 (1927) and pt. 2, ANSNNM 47 (1931) with additions and corrections by Ann Johnston. The catalogue numbers are the same in both editions but not the page numbers.



550-540 B.C. remains a plausible date for the beginning of the incuse coinage.³

There were at least 149 incuse coins from Metapontum in the Taranto hoard, ranging at least down to the medium incuse flans of Noe class 9, 188, 189, and 193. The change of module is placed around 500 B.C. The Asyut hoard contained two spread flan staters of Metapontum (Noe class 6, 129 and 131). Since that hoard was buried no earlier than 475 B.C., no chronological conclusions can be drawn, but their presence in Egypt is remarkable. The Asyut hoard provides the first known instance of incuse coins circulating so far east.

Poseidonia

- Obv. FSSM and AMO7 Poseidon with long hair advancing r., chlamys over shoulders, brandishing trident in r. hand, l. arm extended. Dotted border.
- Rev. FOMES and FSSM in relief. Obv. type incuse, trident in relief.

 Incuse border with radiating lines in relief.

Ca. 525-500 B.C. Drachm.

3. 3.67.

The one incuse drachm of Poseidonia in the hoard bears on both sides the striding figure of Poseidon, brandishing trident, the first five letters of the ethnic FOMES and the inscription FSSM the meaning of which remains controversial. The standard coin at this mint was a stater of

- ³ The earliest known hoard is the Sambiase hoard, *IGCH* 1872, see n. 44 below, Noe, p. 49.
- ⁴ There is some confusion as to the exact number of Metapontum coins in the Taranto hoard, see Noe, p. 37; Noe himself mentions, p. 12, the fact that at least "one of the thick flan" staters was included but then in n. 39, where he lists all the specimens from the hoard, the medium flans are excluded and they are not mentioned in his catalogue for Classes 9–12. The British Museum acquired some Metapontum staters from the Taranto hoard from Spinks in 1921 and it seems certain that Noe 188, 189, and 193 were included.
- ⁵ C. M. Kraay, "Caulonia and South Italian Problems," NC 1960, pp. 59-60; Noe, p. 49.
- ⁶ ACGC, p. 169. See E. Babelon, Traitė 2¹, p. 1434, for different interpretations of Fiis (Phistelia, Is) and G. Gorini, La monetazione incusa della Magna Grecia (Milan, 1975), p. 208.



about 7.5 g, divided into two drachms. This contrasts with the 8 g stater of the Achaean cities of Metapontum and Sybaris which was divided into thirds.

No complete die study of the incuse coinage of Poseidonia has been published to date. It is thought to have started later than at Sybaris and Metapontum, probably around 525 B.C.? The hoard evidence is scant: of the two mixed archaic hoards, Calabria and Taranto, containing incuse coins of Poseidonia (*IGCH* 1873 and 1874), the first is poorly published. The Taranto hoard contained five drachms of Poseidonia but it shows only that these coins were issued before the interment of the hoard around 500/490 B.C. The spread incuse fabric at Poseidonia was never modified and came to an end soon after the fall of Sybaris, not later than 500 B.C.

SYBARIS

Obv. VM above (4) or in exergue (5-8). Bull standing l., on exergue line of dots between two lines, head reverted. Dotted border between two lines.

Rev. Obv. type incuse.

Ca. 550/40-510 B.C. Staters (4-5) and one-third staters (6-8).

- 4. 7.82.
- 5. 7.96. NFA 16, 2 Dec. 1985, 22.
- 6. 2.71. ANS.
- 7. 2.60.
- 8. 2.46.

No corpus of the incuse coinage of Sybaris has yet been published. The mint output must have been at least as important as that of Metapontum. It is generally assumed that both cities started their coinage at about the same time, probably around 550-540 B.C.* K. Fabricius* has proposed a preliminary classification into four groups, based on differences in the rendering of the bull and in the disposition of the

- 7 ACGC, p. 169.
- ⁸ ACGC, p. 163. Noe, p. 49.
- K. Fabricius, "Sybaris, Its History and Coinage," Actes du CIN, 6-11 July 1953 (Paris, 1957), pp. 65-76.



letters of the ethnic: first group A with VM retrograde above the bull, then group B with VM in exergue, and then the smaller groups C and D with the legend MY above the bull or in the exergue. There seem to be no fractions in group A, which is therefore considered the earliest, followed by group B where the issues of fractions become quite important. Of the five specimens represented in the Selinus hoard, 4 can be considered the earliest followed by 5 and the three one-third staters, 6-8. These issues certainly belong before the destruction of Sybaris by Croton in 510 B.C. but a more precise date between 540 and 510 B.C. cannot be assigned.

Once more the hoard evidence is limited: 136 incuse coins from Sybaris were included in the Taranto hoard. They all seem to belong to Fabricius groups A and B. Too little is known of the Sambiase hoard (*IGCH* 1872) to use it for the chronology of Sybaris.

HIMERA

Obv. Cock with one claw raised, standing r. Dotted border.

Rev. Incuse square of four raised and four sunken triangles within striated square border (mill-sail, clockwise).

Ca. 540 B.C. Drachm.

9. 5.23. Probably obv. of *Himera* 16 (O 11). ANS.

We know of only one drachm of Himera in the Selinus hoard. Both the coin and the die are worn. Because of its condition, it is difficult to identify the obverse die with absolute certainty but it seems to be the eleventh of the first 26 dies that Kraay placed in his group 1.18 Kraay dated the beginning of the coinage of Himera to about 550/540 B.C. Thus, drachm 9 is one of the oldest specimens in the hoard and should be dated around 540 B.C.



¹⁰ Above, n. 9, p. 73.

There is general agreement among scholars that the incuse coinage of Sybaris was struck before the destruction of the city by Croton in 510 B.C. A recent article by M. Vickers, "Early Greek Coinage: A Reassessment," NC 1985, esp. pp. 35-37, "Sybaris," proposes a new low chronology, but the authors of this article judge it more prudent to await further positive evidence before accepting this view.

¹⁸ Taranto, pp. 26–27.

¹⁸ Himera, p. 36.

The Taranto hoard contained four drachms from Himera, all apparently belonging to Himera group A. 14 Four drachms were also in the Asyut hoard, ranging from group 1, 8c, to group 5, 137 Aa (ca. 500 B.C.). Their presence is of no particular chronological significance, since the burial date of this deposit is thought to be no earlier than 475 B.C., but it is certainly remarkable to find Sicilian currency in Egypt.

SELINUS

Obv. Selinon leaf.

Rev. Incuse square divided into ten (10-24; 31; 43-44), twelve (25-28; 32-42), or eight (29-30) triangles.

540/30-510 B.C. Didrachms or staters.

- 8.75. Obv. around, four pellets. 10. -
- 11. -8.49. Obv. around, four pellets. Rev. of 10.
- ⁻12. 8.73. Obv. around, four pellets. Rev. of 10.
- ^L13. 8.93. Obv. of 12.
- 14. 8.73. Obv. around, four pellets. Rev. of 13.
- 15. -8.59. Obv. around, four pellets. Rev. of 13.
- $\left[^{16.}_{17.}\right]$ 8.22. Obv. around, four pellets.
- 8.58. Dies of 16.
- 18. 8.11. Obv. pellet on either side of stem.
- 19. 9.21. Obv. pellet on either side of stem. NFA 16, 2 Dec. 1985, 59.
- ${20. \brack 21.}$ 9.23. Obv. around, four pellets.
- 8.16. Dies of 20.
- **22**. 8.54. Obv. pellet on either side of stem. NFA 18, 31 Mar. 1987, 42.
- 23. 8.77. Obv. pellet on either side of stem.
- 24. 8.84.
- **25**. 8.59.
- **26**. 7.65. Rev. of 25.
- 27. 8.59. Rev. of 25.
- **-28**. 8.70. Rev. of 25.
- 29. 8.74. Obv. of 28.

¹⁴ Himera, p. 23.

```
30.
        8.72. Obv. around central leaf, two pellets. The base of the
              leaf has become an animal's head (a fox or a bat?).
              Bank Leu 38, 13 May 1986, 28.
31.
         9.18. NFA 16, 2 Dec. 1985, 60.
32.
         8.95.
33.
        8.79.
34.
         8.92. Obv. pellet on either side of stem.
35.
         7.84.
36.
         9.00. Obv. pellet on either side of stem. Rev. of 35.
└37. -
        7.92. Dies of 36.
        8.70.
┌38. ⁻
39.
        8.80. Dies of 38.
40.
        8.06. Dies of 38.
41.
        8.81. Rev. recut die of 38? ANS.
42.
        8.18.
        8.95.
43. ¬
44.
        8.67. Rev. of 43.
```

ARNOLD-BIUCCHI, BEER-TOBEY, AND WAGGONER

There are 35 coins from Selinus in the Selinus hoard, representing less than a quarter of the total content. This relatively low proportion of local coin in a hoard found in Sicily is quite exceptional. Usually Sicilian hoards are composed exclusively of coins from mints within the island; the pattern of circulation even indicates that coins from the western Sicilian mints did not penetrate the eastern part of the island and vice versa. Foreign coins of this early period, from mainland Greece and from South Italy as well, were unknown in Sicily before the discovery of the Selinus hoard. The Asyut and the Taranto hoards present the only known examples of Sicilian coins found outside the island.

The Selinus coins are all of the same denomination, ranging in weight from 7.65 g to 9.23 g, concentrating around 8.7 g. They are usually called didrachms, though no drachms or smaller fractions (either obols or litrae) are known for the earliest issues. They could just as well be tridrachms, like the Corinthian staters to which they correspond closely not only in weight but also in fabric.

The early coins of Selinus all bear on the obverse a leaf of selinon, the wild parsley that became the badge of the city. The reverse at first



8

consists simply of an incuse square, divided diagonally into triangles; later a small selinon leaf is added to the incuse square. The archaic coinage of Selinus can therefore be divided into two main groups. All the coins from the first group are didrachms; fractions (obols or litrae with their subdivisions) are known only for the second group. The 35 Selinus coins in the hoard all belong to the first group.

There are two main types of selinon leaf: a trilobate, stylized leaf (as 10-22) and a more naturalistic type (38-44) ramified and palm-like. Both types present innumerable variations. On some dies the leaf is surrounded by two to four pellets, for which no satisfactory explanation has yet been found. They cannot be marks of value since their number varies on coins of similar weight. A very original design appears on 30: the selinon leaf is transformed into an animal head—perhaps a fox or a bat—by the addition of two pellets on either side of the stem, at the base of the leaf, surrounded by a line tracing the shape of the muzzle.

Just as the relative proportion of Selinus coins in this hoard seems low, so one would expect to find a greater incidence of die linkage between coins found in a burial near the mint. There is enough linkage, however, to allow a tentative relative arrangement. The small trilobate leaves, surrounded by pellets, on compact flans (10-22) seem to be the earliest, and 13, 16-18, and 20-21 show signs of wear. The more naturalistic leaves of 38-44 are more developed in style and probably belong later in the series. Of these, 38-40 are from the same pair of dies and are well preserved. This suggests that they were minted not long before the burial date of the hoard. The die linkage also shows that different types of leaves were minted at the same time since they often share the same reverse die (25–28 and 35–37). Similarly, a small twelve-part incuse square can be linked to a larger eight-part incuse by the same obverse die (28-29). The progressive deterioration of the reverse dies also supports the relative sequence presented in the catalogue (25-29 and 35-37). It must be emphasized, however, that the reverse punches

¹⁶ Actually, the two selinon leaves, the more rounded and the palm-like serrated one, probably represent two varieties of parsley grown around Selinus, since both types continue into the second group when the leaf is added to the incuse reverse. The round leaf resembles what we know as cilantro, or coriander, and the more pointed variety is similar to the so-called Italian parsley.



present great difficulties for die comparisons: when the die wears down, the triangles tend to fill up and shorten and almost change their shape. This becomes clear if one observes 25–28: at first the reverse die of 27–28 seems quite different from that of 25–26 but after closer examination, it can be seen that the triangles in the corners of the incuse have been filled and give the impression that the punch is smaller but in fact they have all been struck with the same reverse. Another good example of this phenomenon is the reverse die of 43–44.

The similarities between the fabric and standard of the coins of Selinus and the Corinthian staters have already been pointed out on several occasions. 16 At Corinth, coinage starts with a standard coin of about 8.5 g and it cannot be a mere coincidence that the earliest coins of Selinus, and of Gela and Acragas as well, are of practically the same standard but heavier. Until the discovery of the Selinus hoard, this similarity created problems: it was difficult to explain how Corinthian currency could have influenced Sicily since no pre-fourth century Corinthian coins had been found on the island and the only evidence had been a few overstrikes¹⁷ of Sicilian coins on Corinth. Jenkins could only assume that Corinth, the Greek city that dominated trade in the sixth century before the rise of Athens, must have played an important role in Sicily after founding Syracuse. The Selinus hoard now supports these earlier assumptions. The fabric of the coins of Selinus, with the spread flans of specimens like 27 or 32-37, is very similar to that of the early Pegasi such as 131-37.

The absolute chronology of the archaic coinage of Selinus is difficult to establish. The hoard evidence is scant and not always useful, since the early coins of Selinus were minted mainly for local usage and did not circulate much beyond the limits of the city. Of the five hoards containing archaic coins of Selinus listed in *IGCH*, two—*IGCH* 2059, Selinus



¹⁶ G. K. Jenkins, *The Coinage of Gela*, AMUGS 2 (1970), pp. 125-27, and "A Note on Corinthian Coins in the West," *ANSCent.*, p. 368; *ACGC*, p. 208.

¹⁷ For the second group of Selinus over Corinth, see W. Schwabacher, "Die Tetradrachmenprägung von Selinunt," *MBNG* 43 (1925), p. 29, n. 4. See recently S. Garraffo, *Le riconiazioni in Magna Grecia e Sicilia*, Studi e Materiali di Archeologia Greca 2, Università di Catania (Catania, 1984), p. 138, though he does not add any new examples to Schwabacher's list. For the earliest overstrikes of Acragas over Corinth, see discussion pp. 25–26, below.

nunte (?) 1888, and *IGCH* 2067, Selinunte (?) 1898—consist only of didrachms of Selinus. The Himera (?) 1892 hoard, *IGCH* 2072, ¹⁸ contained one didrachm with a leaf on the reverse and one obol of Selinus, 29 early drachms of Himera and four didrachms of the Acragantine type. The last obverse die of this issue O 15¹⁹ is represented and therefore the hoard must have been buried just after 472 B.C. when the dominion of Theron of Acragas over Himera ended. For the archaic coinage of Selinus, this only shows that the second group, with the selinon leaf in the incuse square of the reverse, and the fractions must have started before 470 B.C.

The other two hoards are mixed finds and somewhat more useful in terms of chronology. The Taranto hoard contained eight didrachms from Selinus.²⁰ They all belong to the first group, with the incuse square on the reverse, and one is from the same pair of dies as 20–21. If we accept a burial date of 500–490 B.C. for this hoard, then the first Selinus group started before 500 B.C. and the leaf of the reverses of the second group was introduced after 500 B.C. Neither the Taranto hoard nor the Selinus hoard contained didrachms with the very regular incuse, divided into eight sunken triangles, of the type of SNGANS 4, 682–83, which probably represent the very last issue of the first group.

The only other mixed hoard that is relevant for the dating of the archaic coinage of Selinus is the Monte Bubbonia hoard, *IGCH* 2071, buried around 475/70 B.C.²¹ There were 31 didrachms, 24 of the first group and 7 of the second. In addition to coins from several Sicilian mints, one tetradrachm from Acanthus and six tetradrachms from Athens were also present. This find helps to date not the beginning of coinage at Selinus but rather the end of the archaic issues: no tetradrachms with the sacrificing river god on the reverse were present. It seems therefore at least possible that the archaic issues of didrachms did



¹⁸ Himera, p. 25.

¹⁹ G. K. Jenkins, "Himera: The Coinage of the Akragantine Type," AIIN, suppl. to vol. 16–17 (1971), p. 27.

Babelon in *Taranto*, p. 23, lists five specimens and there are three additional examples in Sotheby, 19 Jan. 1914 (Cumberland Clark), 95–97.

²¹ This is the date suggested by Jenkins (above, n. 16), pp. 22-26 and 154, and confirmed by U. Westermark and G. K. Jenkins, *The Coinage of Kamarina* (London, 1980), pp. 21-23.

not stop after the battle of Himera (in which Selinus sided with the defeated enemy) in 480 B.C., as is often assumed,²² but continued into the seventies.

The hoard evidence shows that Selinus started issuing coins sometime in the second half of the sixth century B.C. and continued until around 470 B.C. A period of some seventy years does not seem too long a period for the early coinage of Selinus, since the output of the mint was quite considerable, at least as important as that of Himera.

Since there is so little evidence for the dating, a brief comparison with the archaic coinage of Himera may prove fruitful. It has been thought that the earliest cities to strike coins in Sicily were the three Chalcidian colonies, Zancle, Himera, and Naxos.23 At first, all three mints issued coins that were thirds of the Chalcidian stater. Kraay24 has demonstrated that the archaic coinage of Himera was much more important than previously assumed: 149 obverse dies have been recorded for the period 550/40-483 B.C. At Zancle 61 obverse dies have been recorded for a slightly shorter period, and 19 at Naxos. For Selinus a preliminary and still incomplete study²⁵ has revealed 133 obverse dies for group 1 and 32 for group 2. Selinus and Himera, then, were the two most important Sicilian mints in the sixth century B.C. The two cities must have developed similarly at the beginning²⁶ and must have started issuing coins at approximately the same time, although it is difficult to say which began first. At both mints the badge on the obverse was subsequently added to the reverse, reduced in size to fit the incuse. Kraay dated the first phase (his groups 1 to 4) between 550/40 and



²² ACGC, p. 208.

²³ ACGC, pp. 204-9, and Himera, p. 11.

²⁴ Himera, pp. 11-12.

²⁵ A preliminary die study based on the coins in the ANS collection and photofile, the coins in the British Museum and in the Cabinet des Médailles, Paris, was presented by C. Arnold-Biucchi at the eighty-eighth general meeting of the AIA in San Antonio, Texas, in December 1986. See also A. Tusa Cutroni, "Aspetti e problemi della monetazione arcaica di Selinunte (Inizi-480 a.C.)," Kokalos 21 (1975), pp. 154-72. Of importance for the chronology, she mentions, p. 160, that one of the later didrachms of group 1 was found under a wall belonging to the reconstruction phase of the acropolis which, according to the archaeologists, occurred in the first years of the fifth century B.C.

²⁶ T. J. Dunbabin, The Western Greeks (Oxford, 1948), pp. 300-325.

515 B.C. and placed the introduction of a hen on the reverse at the end of group 4, around 515 B.C. Although these dates in general may be tentatively adopted for Selinus, his date of 515 for the introduction of a reverse type at Himera may ultimately prove to be somewhat too early.

The difficulty of dating the coins of Selinus in the hoard creates a problem in trying to establish a burial date for this find: normally a hoard is dated by the latest coins from the mint closest to the findspot. Coins 38–44 are in very good condition and must have been struck only a few years before the hoard was closed; however, both the proportionate number of coins and the extent of die linkage are less than one might have expected in a hoard buried so close to home.

If the coinage represented by Selinus in this hoard does not contribute to the burial date, other contents may help to establish a date for the beginning of group 2 at Selinus. Kraay²⁷ believed that the development of a reverse type at Corinth probably influenced the same development at Sicilian mints. The Selinus deposit provides the first and earliest hoard evidence that Corinthian Athena heads were actually imported into Sicily in the archaic period and, if Corinthian influence is indeed a factor, supports the date of ca. 510–500 B.C. for the first appearance at Selinus of the leaf within the incuse square.²⁸

GREECE

ABDERA

Obv. Griffin seated l., r. foreleg raised.

Rev. Four part incuse square; stippled surface.

Ca. 510-505 B.C. Tetradrachm.

45. 14.09. NFA 18, 31 Mar. 1987, 82 = Bank Leu 38, 13 May 1986, 51.



²⁷ ACGC, p. 208.

²⁰ For the Corinthian contents and discussion of Kraay's dating for the Athena heads, see catalogue and commentary on pp. 22–26, below. C. Boehringer would place the introduction of the Selinus reverse type no earlier than 490 B.C., "Der Beitrag der Numismatik zur Kenntnis Siziliens im vi Jahrhundert v. Chr.," Kokalos 1, nos. 30–33 (1984–85), pp. 116–19.

The only tetradrachm of Abdera in the Selinus hoard, in an excellent state of preservation, falls in May's group 10, the next to last group in his period 1. Although the exact obverse die has not been found, its closest parallels are his 22 (A.19) and 23 (A.20), the only two tetradrachms in group 10. Of the seven Abderite tetradrachms in the Demanhur deposit, so dated ca. 500 B.C., the latest is 23. May placed his period 1 between 540/35 and 520/15. However, since the pieces in Demanhur run practically to the end of that period, the authors of Asyut have carried it down to 500 B.C. A date between 510 and 505 seems plausible for group 10.

AEGINA

The coins are arranged by Asyut groups (pp. 69-76, 424-556). The dates given below reflect a slight revision of Asyut, as suggested in the commentary that follows. The occurrence of the same obverse and/or reverse die in other relevant hoards is noted after the individual entry.³¹

Group 1, ca. 535/530 - 525/520 B.C.

Obv. Sea turtle with a row of dots down the dorsal spine.

Rev. Rough incuse with undeveloped pattern; pre-Union Jack.

Staters.

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[ 46. ] 12.20.
47. 12.19. Dies of 46.
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47. 12.19. Dies 01 40.

48. 7 12.27. Obv. of 46.

49. 12.21. Rev. of 48.

- ** See May, p. 52, 4, *IGCH* 1637.
- 30 Asyut, pp. 36-37, 129-43.
- ³¹ Although a preliminary report of the Isthmia deposit by O. Broneer appeared in *Hesperia* 1955, pp. 135–36, it has never been fully published. Dr. Broneer kindly permitted Leslie Beer-Tobey to study the Aeginetan coins and to make casts during the preparation of her dissertation on the coinage of Aegina.

McClean 6009 and 6010, cited for entries 56 and 89 below, are not noted in the Fitzwilliam catalogue as coming from the Taranto hoard. However, this provenance has recently received first-hand confirmation.



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50.
        12.12.
51.
        12.39. Obv. of 50.
Group 2, ca. 525/20 - 500 B.C.
        Obv. Similar to group 1, gradually becoming more detailed.
        Rev. "Union Jack" of eight sunken triangles, often with
              broken segments.
        Staters (52-120, 123-24), drachm (121), and hemidrachm
                (122).
52.
        12.15. Obv. of 50.
53.
        12.15.
        12.42. Dies of Matala 65, Isthmia, Asyut 429.
54.
55.
        12.34. Obv. of 54.
56.
        12.24. Obv. of Matala 5, 6, Taranto = McClean 6009,
                Isthmia.
        12.27. Dies of Matala 33.
57. <sub>7</sub>
58. <sup>J</sup>
        12.39. Rev. of 57.
59.
        12.30.
60. ¬
        12.32. Obv. of Asyut 433.
61. <sup>J</sup>
        12.32. Dies of 60. ANS.
62.
        12.36. Obv. of 60.
        12.26.
63.
64.
        12.17.
65.
        12.19. Dies of Asyut 432, obv. of Matala 69.
        12.31. Obv. of 65.
67.
        12.12. Obv. of 65.
68.
        12.24. Dies of Matala 31.
        12.45. Obv. and rev. (?) of South Anatolia 23.
69.
70.
        12.20. Obv. of 69.
        12.40.
71.
72.
        12.05. Obv. of 71.
73.
        12.26. Obv. of Matala 16.
74.
        12.28. Dies of Matala 14, obv. of Matala 13, Isthmia.
75.
        12.24. Obv. of 74. ANS.
76.
        12.21.
        12.24.
        12.10. Dies of 77. ANS.
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12.50. NFA 18, 31 Mar. 1987, 151.
  80.
           12.07. Obv. of 79.
  81.
           12.32.
           12.15. Dies of Matala 32, obv. of Isthmia, rev. of Asyut 435.
  82. ¬
  83.
           12.43. Dies of 82.
  84.
           12.28. Obv. of 82.
           12.20. ANS.
  85.
           11.97. Obv. of Matala 38, Isthmia. ANS.
  86.
  87.
88.
           12.13. Obv. of Asyut 438.
           12.16. Dies of 87.
           12.43. Obv. of Taranto = McClean 6010.
  89.
  90.
           12.10. Obv. of 89.
  91.
           12.23. Rev. of 90.
  92. -
           12.14. Obv. of 91.
  93.
           12.37. Dies of 92.
  94.
           12.19.
  95. <sub>]</sub>
           12.31. Obv. of Matala 1.
  96.
           12.22. Dies of 95.
  97. 7
           12.29. Obv. of 95.
  98. <sup>_</sup>
           12.25. Dies of 97.
 99. <sub>]</sub>
           12.19.
12.19. Dies of 99.
 101. 7
           12.30.
ر 102. <sup>تا</sup>
           12.30. Rev. of 101, obv. of Matala 24.
ר .103
           12.08. Obv. of 102.
-104. <del>-</del>
           12.33. Dies of 103.
<sup>L</sup>105. <sup>J</sup>
           12.09. Dies of 103.
 106.
           12.16.
ר 107. ד
           12.36. Dies of Asyut 437.
-108. -
           12.15. Dies of 107.
├109. <sup>⅃</sup>
           12.10. Dies of 107.
<sup>L</sup>110.
           12.10. Obv. of 107.
\begin{bmatrix} 111. \\ 112. \end{bmatrix}
           12.35.
           12.11. Dies of 111. ANS.
           12.22.
 113.
Γ114.
           12.20.
<sup>L</sup>115.
           11.98. Obv. of 114.
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ARNOLD-BIUCCHI, BEER-TOBEY, AND WAGGONER



16

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116.
           12.26.
           12.18. Obv. of Matala 56.
-117. ¬
 ·118. <sup>-</sup>
           12.16. Dies of 117.
<sup>-</sup>119. ¬
           12.05. Obv. of 117.
 120. ·
           12.22. Dies of 119.
 121.
            5.97.
 122.
            3.07. NFA 18, 31 Mar. 1987, 152.
           "Proto-tortoises," segmented carapace.
r123.
           12.31. NFA 18, 31 Mar. 1987, 150.
<sup>L</sup>124.
           12.13. Obv. of 123.
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Group 3, ca. 510-490 B.C.

Obv. Similar to group 2.

Rev. Incuse with five sunken segments intentionally cut. Staters.

 $\begin{bmatrix} 125. \\ 126. \end{bmatrix}$ 12.30. 12.36. Dies of 125.

The 81 Aeginetan coins, archaic issues all struck in the second half of the sixth century B.C., comprise almost 50 percent of the hoard's content. With the exception of the Taranto hoard, these coins had not been found in early hoards from the western Mediterranean. That they should be present here in such relatively large numbers is nothing short of remarkable.

The groups defined in *Asyut* number seven in all, the latest containing the small skew reverses. Group 1 is preceded by Brown class 1 and Holloway's Matala groups A, B, and early C, placed ca. 550–530/525 B.C., while group 7 is followed by the T-back large skews, dated in *Asyut* after 480 B.C.³²

There are no examples of Brown's and Holloway's earliest issues from Selinus. The first six coins fall within Asyut group 1, before the incuse



³⁸ See summary in Asyut, p. 76; W. L. Brown, "Pheidon's Alleged Aeginetan Coinage," NC 1950, pp. 177-204. Colin Kraay, in discussing the early operation of the mint, ACGC, pp. 43-44, begins the coinage no earlier than the second quarter of the sixth century and places the change to small skew reverse around 500 B.C.

pattern was fully developed. Given the die linkage within group 1, and the transfer of one obverse die to group 2 (from 50 and 51 to 52), these six coins would have been struck toward the end of the first group. The turtles display small heads and little detail other than a row of dots down the dorsal spine.

The vast majority of Aeginetan turtles from this hoard, 73 of the 81 coins (52-124), fall within group 2, characterized by the so-called "Union Jack" reverse, an incuse square regularly divided into eight sunken triangles by diagonal lines converging at the center. While reverses like 50-51 are also divided into eight segments and approximate the Union Jack pattern, the lines do not meet or cross at a central point. This group is dated in Asyut from around 510 B.C. The obverses continue as in group 1. There is only gradual change as new dies are introduced, with the obverse shared by 51 and 52 forming a transition here between groups 1 and 2. Some later obverses show a shell in slightly higher relief, there is often some indication of an eye or beak, and some variation in the depiction of the collar rim. On certain coins within this group, there is a change in the size of the turtle relative to the coin. Nos. 102-20 bear turtles with larger shells and slightly heavier legs than on other coins. Two coins, 114 and 115, have broader collar rims but still have thin legs. This group amply illustrates the prolonged use at the Aegina mint of worn dies that normally would have been discarded long ago. A number of coins in the hoard were struck from obverse dies which must have been used for thousands of strikings.33 Especially notable is the severely flawed obverse seen on coins 74-75. The flaw extends diagonally across the entire surface of the die and is easily recognizable in other hoards and museum collections. Many coins might appear at first glance to have circulated extensively; in fact, it is the dies that are worn (for example, 50, 51, 60–62, and 65–67).

Reverse dies suffered even greater wear than the obverses and could not have lasted as long. The designs struck by the punch dies are often incomplete due to breakage caused by hammering into the flan. Many of the dies have lost segments from excessive usage or have been reduced to a shallow, multilined impression (e.g., reverses of 66 and 67,



³³ See D. G. Sellwood, "Some Experiments in Greek Minting Technique," NC 1963, pp. 217-31.

struck with the same obverse die). Several dies are almost identical, and often careless striking renders it impossible to tell whether the same die or a similar one was used to strike certain coins (see 89 through 99). Whereas 73 and 123 are clear examples of Union Jack dies, sections of the pattern often broke off and, during reuse, the punch die was trimmed to eliminate worn segments. Group 2 reverse dies often appear to be of slightly later pattern, when in fact they are not. For example, one might take the reverse of 84 as having the five sunken segments intentionally cut, characteristic of group 3; but upon close examination, cracks and lines from the Union Jack pattern can be detected. The reverse of 96 appears to have only four triangles, the "windmill" design of group 4; however, it links to the reverse of 95. The reverse of 96 is an example of a trimmed or redressed die.

In this hoard there are altogether 58 obverse and 40 reverse links, thereby providing 43 obverse and 60 reverse dies for 81 coins. The mint appears to have been reluctant for one reason or another to manufacture new dies. This is reflected not only in the wear of many of the dies within this hoard, but also in the number of obverse and reverse links with Aeginetan coins in other hoards of roughly the same or slightly later period, as indicated in the catalogue. Three of the Aeginetan staters from Selinus are linked to coins in the Taranto hoard, 25 to coins in the Matala hoard, and two to specimens in the small southern Anatolian deposit. The Isthmia deposit claims nine coins from dies found at Selinus and 16 at Asyut. Often the same dies reappear in several hoards. The obverse used to strike 54 and 55 is found in Matala, Isthmia, and Asyut; 56 was also used for coins in Matala and Taranto, and so on.

The severely flawed die previously referred to and used for the obverses of 74 and 75, occurs over and over again in its decrepit state. To mention only a few instances, it appears twice in the Matala hoard and once at Isthmia, as well as in the Megalopolis hoard buried as late as ca. 431 B.C.³⁴ No. 74 shares a similarly disintegrated reverse die with

SNGDelepierre 1567-68. The Megalopolis hoard of at least 298 Aeginetan staters, acquired by J. and M. Delepierre between 1936 and 1940, entered the Paris cabinet along with the rest of their collection in 1966. The hoard is illustrated in its entirety in SNGDelepierre 1550-1847 and was the subject of an article by H. Nicolet, "Remar-



Matala 14. This obverse is usually coupled only with Union Jack reverses; but for one coin it was struck in combination with a group 3 reverse.²⁵

The extreme die wear makes it difficult to judge the degree of wear due to circulation of the coins themselves. Certainly coins in group 1 show circulation, as do several in group 2. Other coins appear recently struck. On the obverse of 102-5, for example, the die flaw extending from the rear flipper at the right is distinctly sharp with no blunting caused by circulation wear.

Aeginetan coinage in its archaic stages had little artistic merit, but it was recognized as an international currency and thus, like the owls of Athens, was slow to change stylistically. Mention has been made of the "original unflattened surface of the flan around the incuse" in contrast to later reverse strikings, which are more generally flattened over the entire surface of the flan. In the Selinus hoard, some flattening can be seen around the incuse punch in a large proportion of the coins from about 56 onward. This varies from coin to coin, as the reverse punch would have been hand held and blows from the hammer would vary somewhat in the way the punch was applied.

Only two coins (125-26) can with certainty be considered examples of group 3 (five segments intentionally cut). They share one pair of dies and constitute the latest strikings in the hoard.

Group 2 is bounded at one end by group 1, where the transition is provided by the transfer of an obverse die, and at the other end by the two coins of group 3. There must certainly have been some overlapping between the various groups, as suggested in Asyut,³⁷ especially from group 2 onward. However, the group representation and the pattern of die linkage that has now emerged within group 2 strongly indicates that

ques sur le monnayage d'Égine au vi et v s., d'après la trouvaille de Mégalopolis de 1936," Frappe et ateliers monétaires dans l'antiquité et au moyen age, ed. Vladimer Kondií (Belgrade, 1976).



³⁵ That coin, now in the Ashmolean Museum, is from a Greek hoard of Aeginetan staters dating through the small skew (group 7); see *Coin Hoards* 1 (1975), 8, dated ca. 480 B.C.

³⁶ Matala, p. 12.

⁸⁷ See discussion in Asyut, pp. 74-76.

this hoard contained a representative sampling of that group, much of which must have been minted before group 3 was introduced.

Group 2 coins appear to have constituted a relatively large issue, reflecting Aegina's well established monetary position as indicated by its representation in hoards from other areas of the Mediterranean in this general period. The evidence here would support a briefer time span for this group than once thought. At the same time, the Asyut date of 510 for the beginning of group 2 now seems too late. It will be seen below, pp. 28-35, that the closing date of the Selinus find must be placed no later than 510-500 B.C. It bears repetition that dies of group 2 continued to be used until they were all but unrecognizable, and coins struck from worn dies continued in circulation for some years after the mint had produced the dies themselves. It is plausible that the transition to group 2 could have occurred as early as 525/20 B.C. Until then, production was probably sporadic. A date earlier or later than 525 would depend upon whether coins were struck over a long period of time or in rapid succession. This is a question that can be addressed only after a full corpus of Aeginetan turtles has been compiled and a thorough die study completed.

A few words must be said here about the proto-tortoises of Holloway's class C. The term derives from the fact that unlike the majority of sea turtles, a few issues render the shell as a segmented carapace closer to that of the later land tortoises. Two examples of this variety occur in the Selinus hoard (123–24, from the same obverse die). Although staters of this type are relatively rare and still not fully understood, several archaic dies are known, ranging from the very early style resembling a bunch of grapes, found in the Cyclades Hoard (IGCH 6), ca. 500 B.C., 38 to the later, more realistic renderings, such as 33 in the South Anatolian hoard, and 509–13 in group 5 from Asyut. The proto-tortoise staters were originally thought by Robinson (South Anatolia) to have been struck in Crete, as the later pseudo-Aeginetan hemidrachms surely were. He was still reluctant to concede Aegina as the mint in his publication of the South Anatolian hoard. However, Holloway has shown that these staters must be Aeginetan. Although it is now certain that



Matala, p. 11, class C, obv. 1 (Boston, MFA). The proto-tortoises constitute his class C, which is placed very early in Aegina's coining period.

several strikings run much later than Holloway's C,³⁹ their presence along with so many other Aeginetan coins in a Sicilian hoard should reinforce his attribution. In style and fabric, 123–24 fall between the earliest and later strikings. That they belong to group 2 is assured by the Union Jack reverses.⁴⁰

Nos. 121 and 122 are the only Aeginetan fractions in the hoard. It is not yet clear when the first fractional coins were introduced, and few of these smaller denominations are included in hoard material. The style of these two coins is that of group 2, but whether they come closer to the beginning or to the end is not known. Other coins from these dies exist in museum collections, but not in any known hoard context.

CORINTH

Ravel's die combinations are prefixed by the letter R.; P/T numbers cite his obverse/reverse dies. The dating, however, follows ACGC, p. 78-82, and Asyut, pp. 78-79.

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Ravel Period 1 (560/550-515/500 B.C.)
    Class 1
         Obv. Pegasus.
         Rev. Mill-sail incuse.
         Drachms.
 127.
          2.63.
 128.
           2.77.
 129. <sup>J</sup>
          2.75. Rev. of 128.
    Class 2
         Rev. Swastika incuse.
         Staters.
 130.
          8.01. Obv. P28.
 131.
          8.68. R 42 (P34/T33).
```



³⁹ See Asyut, p. 76.

⁴⁰ Although these dies have not yet been found in other early hoards, it is noteworthy that the obverse does occur in two deposits of much later date: the Megalopolis hoard, ca. 431 B.C. (above, n. 34), SNGDelepierre 1838, and the Myrina Hoard of 1970, ca. 440 B.C., published by M. Oeconomides in Essays Thompson, pp. 231-39, specifically pl. 27, 2.

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132. 7 8.23. Obv. P35. NFA 18, 31 Mar. 1987, 154.
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133. J 8.39. Obv. P not, see P36; rev. of 132.

134. 7 8.39. R 46 (P36/T36).

135. 3 8.50. Obv. P not, see P36; rev. of 134.

136. 8.72. Obv. P40.

137. 8.29. Obv. P41.

8.46. Obv. P30. The reverse linkage with 139 and 140 below, suggests that Ravel's P30 may come a little later in the sequence than he placed it.

139. | 8.57. Obv. P not, see P46; rev. of 138.

140. — Obv. P not, see P47; rev. of 138.

141. 8.11. Doublestruck. Obv. P not, see P57.

Class 3

Rev. Four part incuse square; rounded projection in each square.

Stater.

142. 8.56. NFA 16, 2 Dec. 1985, 173. Obv. P63; rev. T not, see T61.

Ravel Period 2 (515/500-480/475)

Class 1

Rev. Small head of Athena within linear border, all within incuse square.

(R 104), then this new combination of dies, together with the use of T69 with both P66 (R 97) and P70

Staters.

```
143.
          8.43. R 96 (P66/T68).
          8.35. Dies of 143.
144. -
-145. <sup>_</sup>
          —— Dies of 143.
          8.68. Obv. of 143. NFA 16, 2 Dec. 1985, 174. R 97 (P66/T69).
<sup>-</sup>146. <sup>-</sup>
<sup>-</sup>147. <sup>-</sup>
          —— Dies of 146.
148.
          8.48. Dies of 146.
-149. -
          8.65. Dies of 146.
150.
          8.53. Dies of 146.
151.
          — Dies of 146.
152.
          —— Obv. of 143. Die combination R not; P66/T73 (?). If
                this reverse die is indeed T73, also used with P70
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(R 105), suggests that P 70 should follow immediately
                 P66 in Ravel's sequence of obverse dies.
 153.
          7.65. Obv. and rev. dies R not. See P66/T68-69.
<sup>-</sup>154.
          8.67. R 98 (P67/T70).
155. 7
          8.67. Obv. of 154. R 99 (P67/T71).
<sup>∟</sup>156. <sup>⅃</sup>
          8.40. Dies of 155.
          8.63. R 100 (P68/T72).
Ր157. ๅ
<sup>-</sup>158.
          8.59. Dies of 157.
-159. ¬
          8.58. Obv. of 157. Die combination R not; P68/T75. NFA
                 18, 31 Mar. 1987, 156.
└160. ┙
          8.45. Dies of 159.
161.
          8.55. Obv. corroded. R 106 (P70/T75).
┌162. ┐
          8.53. Obv. P73; rev. T not; see T78.
<sup>-</sup>163.
          8.59. Dies of 162.
          7.99. Corroded. Obv. of 162; rev. T79 (?).
Ի164. ገ
└165. ┘
          8.10. Doublestruck. Corroded. Dies of 164.
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This hoard contained three drachms and 36 staters of Corinth, 39 coins in all, approximately one-quarter of the entire hoard. It provides the first evidence for the importation of Corinthian coins into Sicily during the sixth and most of the fifth centuries. Of these 39 coins, 16 represent Ravel's period 1, with patterned incuses, and 23 fall within his period 2, class 1, where the Athena heads make their first appearance on the reverse. Following Colin Kraay's absolute chronology, 41 the first period is contained within the years 570/60 to 515 B.C. Based on the evidence of the Asyut hoard, a date around 500 seems reasonable for the change of reverse type. 42

The earliest coins are the three drachms of class 1 in Ravel's first period characterized by a mill-sail reverse. These are followed by 12 coins of class 2 with swastika patterned incuse; and at least one stater exhibits the final stage of period 1, when the swastika had developed into a true four-part incuse square, each section containing a raised projection.



⁴¹ ACGC, pp. 80–82.

⁴² Asyut, pp. 76-79, 557-95.

The second group is comprised of Ravel's class 1 in period 2. The Athena heads in this class are small and at first they are surrounded by a linear border. As Kraay observed, the border was very soon dropped. It was used with Ravel's first 16 obverse dies (P66–81), then disappeared after R 125 (R 125 appears still to retain the border, despite Ravel's statement to the contrary). The linear border occurs on all 23 Athena heads in this hoard, the latest of which is probably R 110 (P73/T79), P73 being the eighth of the 16 obverse dies in class 1 coupled with reverse border. This leaves 22, or almost three times as many obverse dies remaining in class 1 without reverse border, to be used before the elongated heads of class 2 appear around 480 B.C.

Of the 12 swastika staters from class 2 in period 1 (130-41), no two coins share the same obverse die, and five of these appear to be dies not in Ravel. Ravel's plates or the condition of his coins render it especially difficult to compare the reverse dies of this period. However, three instances of reverse linkage have been established among the 12 hoard coins. For the Athena heads of period 2, six obverse dies and 11 reverse dies were employed, resulting in four tightly knit groups. Two die combinations (152 and 159/160), one obverse die (153), and two reverse dies (153 and 162/163) were apparently unknown to Ravel.

It will be seen in the final analysis that the burial date of this hoard must have been a little earlier than that of the Taranto deposit, which now almost certainly falls within the first decade of the fifth century B.C. The pattern of die linkage among the 23 Athena heads and their fine state of preservation lead to the conclusion that they left the mint as a group not too long after they had been struck and arrived in Sicily shortly before the deposit was closed. As has already been observed above (p. 10, n. 17), until now the only evidence for Corinthian influence on coinages of Sicily has been provided by a few Sicilian overstrikes on Corinthian coins, almost all of these being early Pegasi of Ravel's period 1. However, at least one Athena head of his class 1 in period 2 was overstruck by one of the latest coins of Acragas group 1, dated by Ulla Westermark no later than 500 B.C.⁴³ For the moment,



⁴³ The overstrike is one of two discussed by U. Westermark, "Overstrikes of Taras on Didrachms of Acragas," *Essays Thompson*, pp. 292-93, pl. 36, 15; see also pl. 36, 16-17. See also S. Garraffo (above, n. 17), p. 133, 1 and 3; pl. 16, 10-11; discussions.

Kraay's date of 515 appears more likely than the Asyut date of 500 for the introduction of the Athena heads at Corinth.

Since this group in the Selinus hoard is comprised of only the very first issues, the implications for Sicilian mints cannot be ignored. If Corinth did, indeed, provide the prototype for two types at Sicilian mints, then the change was accomplished in Sicily around 510 B.C. or shortly thereafter, through the direct importation of Corinth's coinage.

UNCOINED SILVER

Dump.

A. AR 2.45 (chisel cut).

Rectangular ingot fragments.

- B. AR 303.62. On one side, grafitto AI
- C. A 160.39. On one side, stamp of turtle in square incuse.
- D. AR 597.43. On one side stamp of bearded male head.

Round cake ingot.

E. A 420.77 (chisel cut). On one side, stamp resembling four part incuse square.

Uncoined silver is often found in Greek coin hoards from the Near East, but rarely in the west. Prior to the Selinus find, the only known instance of silver stamped ingots was provided by the Taranto hoard. The fragments of so-called rectangular slab ingots that this deposit contained were never fully published. However, Babelon does describe the stamp on one piece as a reverse incuse die of Selinus.⁴⁴

sion, pp. 138-39. Westermark has pointed out that Acragas group 1 in turn is found overstruck by a stater of Poseidonia, currently dated 510-500 B.C., thus placing the start of Acragas 1 well before 500: S. P. Noe, "Overstrikes in Magna Graecia," MN 7 (1957), p. 19, pl. 5 f, and p. 21; C. H. V. Sutherland, "Overstrikes and Hoards," NC 1942, p. 2.

⁴⁴ Taranto, p. 32, illus., subsequently melted down. One silver bar weighing 57.20 g, 43 staters of Sybaris and two Corinthian staters of Ravel's period 1 comprised the Sambiase, Bruttium, hoard (*IGCH* 1872, dated to 520 B.C.). This



Among the five ingots from the Selinus hoard,⁴⁵ one is merely a small round dump (A), tested for its purity, as the chisel cut implies. Three are slab fragments, on one of which two letters have been etched, an alpha and an iota (B). Ingot C bears within a small incuse square a turtle which is not recognized as Aeginetan in style. The burnished appearance of the surface of this piece and the detection of what appear to be clean cutting marks along one edge have led to the thought that it might be spurious. However, stamps not at all dissimilar occur on Aegina staters of a slightly later date, such as those found in the 1970 Myrina hoard.⁴⁶ The heaviest fragment (D) has been stamped with a bearded male head rather similar to Corinthian heads of the mid-sixth century.

While square or rectangular slabs seem to be confined to the west, round cake ingots are more typical of fifth century hoards from Syria and Egypt. A. D. H. Bivar⁴⁷ has been able to equate the weights of these with Babylonian shekels and their multiples and fractions. The largest known weighs 497.36 g, and corresponds roughly to the standard of the Babylonian mina, which under the Achaemenids was around 504 g. The cake ingot in the Selinus deposit (E) has been stamped with an incuse that resembles a four part square. Its weight of 420.77 g falls considerably short of the Babylonian mina. Fragments B and D, at 303.62 and 597.439, respectively, might fall within the range of an Agginetan mina and its half; but the weight of the lightest slab fragment (C) does not conform so far to any known standard. J. G. Milne,48 writing in 1938, argued that in the second half of the sixth century Selinus and Himera were the limits of Greek trading voyages to the west, that from these ports to Spain and back the intermediary traders would have been the Carthaginians. Noting that square or rectangular

hoard was summarily reported in AJA 1961, pp. 381-82, but has never been properly published.



⁴⁶ These pieces never came to the ANS. The authors were given the opportunity by Martin Price to examine them while they were on temporary deposit in the British Museum in September 1986.

⁴⁶ See, for example, Oeconomides (above, n. 40), 58.

⁴⁷ "A Hoard of Ingot-Currency of the Median Period from Nush-i-Jan, near Malayir," *Iran* 1971, pp. 97-111.

^{48 &}quot;The Early Coinages of Sicily," NC 1938, pp. 36-52, especially pp. 45-50.

ingots were a purely western phenomenon that did not occur in Greece proper and offering the stamped ingot in the Taranto hoard as an example, he postulated that the chief import from Spain into Sicily would have been in the form of uncoined slab silver which if not needed would have been cut into pieces to conform to a weight standard suitable for a market elsewhere. Kraay,49 on the other hand, simply states that the mines of southern Spain would have been an obvious source of silver only until about 540, when Spain fell under the control of the Carthaginians, at which time that source of silver would have been cut off due to the growing hostility of the Carthaginians to the Greeks in the west. This would have occurred just at the time when the western Greeks started coining. The present state of our research does not yet enable us to provide a comprehensive assessment of these uncoined pieces, neither as to their weight standards nor as to the origin of their stamps. It is a pity that they have been dispersed before metal analyses could be made to suggest the original source of this silver.

THE HOARD EVIDENCE

The significance of this find is paramount. It serves as our only evidence to date for the penetration into Sicily of coins of the archaic period from southern Italy and from Greece proper—except for Athenian coins found in Sicilian hoards beginning in the 480s and the survival of western overstrikes on early Corinthian staters.⁵⁰

The chronological setting for the Selinus hoard is provided by early hoards from elsewhere in the Mediterranean basin which also contained coins from the mints represented in Selinus. The Table is intended to



⁴⁰ C. M. Kraay, "The Archaic Owls of Athens: Classification and Chronology," NC 1956, p. 64.

⁵⁰ See G. K. Jenkins, in *ANSCent*. (above, n. 16), pp. 368-69, for the presence of Athenian owls in the 480s; and p. 369, "... coins of Athens remain, until 400 B.C., the sole imported coins in any Sicilian hoard, there being none of Corinth..."

See also Kraay (above, n. 49), p. 64, n. 3, for a list of Sicilian finds containing archaic owls; also (above, n. 5), p. 76, where he argues that too much weight has been given early Corinthian influence on coinages in the west. For the overstrikes, see Kraay (above, n. 5, pp. 66-72), and nn. 17 and 43 above.

facilitate comparisons with nine other hoards buried between ca. 500 and 475 B.C. Only hoards with coins also in the Selinus hoard are included in the Table.⁵¹

The latest hoards may be considered first. Although there is reason to believe that the majority of the 900 odd coins from Asyut were deposited by 475 B.C., Colin Kraay, in his review of Asyut, 52 has suggested that a few issues were likely added later, thus lowering the final closing of that deposit possibly into the 460s. With regard to previous hoard evidence for early south Italian and Sicilian issues, there is little to add to what has been said above. These coins rarely circulated outside of their own territory. Asyut provides the only known instance of incuse coins traveling to the east. The nine coins included only two spread flan staters of Metapontum (Noe 129 and 131 in class 6 of the late sixth century) and four incuse drachms from Himera, ranging from Kraay's group 1, 8c, down to group 5, 137a, ca. 500 B.C. Hence, although it is remarkable that these mints should have been represented at all, no chronological significance can be attached to the presence of these coins. Asyut also held a fair number of Abdera pieces, 15 coins to group 26, approaching the end of May's period 2, which the authors have lowered to ca. 480 B.C., chiefly on the basis of the evidence in Demanhur for period 1.53 The 133 staters of Aegina included 10 turtles from group 7 (small skew reverse), and most of the 33 Corinthian coins fall within period 2, running to the end of class 1,54 which in Asyut is dated ca. 480-475.

The archaic deposit found during excavations below the destruction level of the Temple of Poseidon at Isthmia, 55 although similar in date to Asyut (ca. 475 B.C.), yielded a more homogeneous lot. As might be expected from a deposit much closer to the mints of two major coinages, it contained chiefly staters and fractions of Aegina (77 coins) and Corinth (14 staters and several fractions), including later issues from



⁵¹ For a full list of the contents in other mixed deposits, see the *IGCH* entries and *Asyul*, pp. 13-16, table.

^{52 &}quot;The Asyut Hoard: Some Comments on Chronology," NC 1977, pp. 189-98.

⁵³ Asyut, pp. 36–37.

⁵⁴ Asyut, pp. 76–79, 557–95.

⁵⁵ O. Broneer (above, n. 31), pp. 135-36.

TABLE

Hoard	Selinus	Taranto	Matala	Persepolis	Persepolis Demanhur	Sakha	Benha	S. Anat.	Isthmia	Asyut
H291		1874	-	1789	1637	1639	1640	1177	=	1644
Date, ca.	510-500	500-490	500-490	500-495	200	500-490	490-485	480-475	475	475-465
Mint (Source)										
Metapontum	Cl. 1, 30	to 9, 193								6, 129
(Noe)	31 2 a	149+								131 2
Poseidonia	1	ro								
Sybaris	ro	135								
Himera	Gp. 1, 16	1, 2a								1.8c
(Humera)		7								2, 37a 4, 100Aa
										5, 137A
	.	•								4
Selinus	38	co								

1 2 14	15	-	12	40	31	5	27	01	7	5	82	9	æ	දූ
1, 1 2,29-48 14		-	7	က	4	2	9	7	imit.	nuc	•	-	2 to R190 6 2 to R169 33	
			19	13	14	_	4	10	=	2	4	∞	62t	1
			2	က	4	5	9	7	st-480	other		-	o R190	
	-		_	4	7	_	က		<u>Z</u> .		11	-	2 t	-
2,44			7	က	4	5	9					-		
••	7		_	-			_				4	-		-
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م م	7		16								16	9		9
1, 2 10a 15a, b 16a, b	ì		7									-		
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		-	7	က	4		9							
			16								16	2	ა	15
			7									_	7	
ું	-	9	73	7							8	16	ឌ	88
Per. 1, cf. 22		Gp. 1		ဗ								Per. 1	2 to R110	88
Abdera (May)		Aegina	(yashn)									Corinth b		

 $^{\text{a}}$ Bold numbers represent the total number of coins from each mint in each hoard. $^{\text{b}}$ Only staters are recorded for Corinth.

both mints than were found in Asyut.⁵⁶ Aegina's coinage continued into the post-480 period, as did that of Corinth which ends with Ravel 190 in class 2 of the second period.⁵⁷

The small Anatolian hoard, of only slightly earlier date, contained 11 Aegina staters distributed among all groups from 2 to 6 (proto-skew reverse), and one tetradrachm from Abdera, May 44, well down into his second period. This marks the earliest occurrence in a hoard context of May's period 2. The hoard claimed but one Corinthian stater from period 1.

Of the three remaining hoards from Egypt—Demanhur, Sakha, and Benha—Demanhur is the earliest. The relatively few coins recorded in the Table from these three mixed finds are undoubtedly fortuitous, due to trade patterns and chance savings. Corinth is represented only by period 1, one example in Benha, one in Sakha, and six specimens out of 167 coins in all from Demanhur. It is of interest to note that while Demanhur and even Sakha contained only group 2 turtles, the four Aegina staters from Benha fall respectively into groups 2, 3, 4 (mill-sail reverse), and 6. The significance of the presence of the seven Abderite tetradrachms has already been stated above (p. 14).

The Persepolis find consisted of two small foundation deposits, one from the southeast corner of the Achaemenid Apadana, or Audience Hall, the other from the northeast corner. Coins in the southeastern deposit certainly date to the end of the sixth century, but it had been thought that the deposit in the northeastern corner was laid down slightly earlier, in or around 515 B.C. It contained one tetradrachm of Abdera and one stater of Aegina, along with a few "Croeseids," now taken away from Croesus altogether and given to the Achaemenids. David Stronach has recently advanced a cogent argument for lowering the foundation date of the building itself to just after 500 B.C., and for



⁵⁶ During preparation of the Asyut hoard for publication, casts of coins from the deposit were at the ANS. Most recently, Elizabeth Gebhard has kindly provided the authors with photos of the Corinthian staters; only the staters are recorded in the Table.

⁵⁷ Asyut, p. 78.

⁵⁸ I. Carradice, "The 'Regal' Coinage of the Persian Empire," in I. Carradice, ed., Coinage and Administration in the Athenian and Persian Empires, B.A.R. 343 (Oxford, 1987), pp. 73–95.

placing both foundation deposits at that time.⁵⁹ This in itself has no chronological effect on Abdera and Aegina: the Abdera piece was among May's earliest, and the turtle belongs to Asyut group 2, which even by Asyut standards begins no later than 510. The new date for the Apadana foundations merely lends support to the current tendency toward a lower numismatic chronology.

The Matala hoard, once thought to have been buried no later than 525 B.C., must in fact have been closed only in the first decade of the fifth century. Except for the one stater of Thera, all are Aegina turtles that run down at least into group 4, and 66–67 resemble very closely the proto-skews of group 6 (Asyut, 514–49). Here again, the overall representation is concentrated in group 2—46 out of 70 Aeginetan staters. But the very presence at Matala by 495.B.C. or so of 23 coins from three later groups is just another indication that the beginning of group 2 predated 510.

Finally, the Taranto Hoard which Babelon had dated ca. 508 B.C., has since been lowered to 500–490 to accommodate the few medium flan incuse pieces of Metapontum, the latest issues in the hoard.⁶¹ It is almost three times the size of Selinus and is comprised of a far more heterogeneous lot. Yet of all the early hoards, it approaches Selinus most closely in provenance and date combined. Before the Selinus find, it provided our earliest evidence for the importation of foreign coinages into the west.⁶² In addition to the coincidence of stamped ingots in both deposits, the Pegasi of Corinth stop at approximately the same time, before the border on the reverse had been discontinued; even though the ratio of Selinus to Taranto for period 2, class 1, is almost 5:1. The ratio for the total number of Aegina coins is about the same, but in astonishing numbers: 81 turtles in Selinus as opposed to 16 from Taranto. However, in the Selinus lot, 73 comprise Asyut group 2, as do all 16 staters from Taranto. Given the proportions, it may be of no signifi-



⁵⁹ D. Stronach, "The Apadana: A Signature of the Line of Darius I," De l'Indus aux Balkans, Recueil Jean Deshayes (Paris, 1985), pp. 439-45.

⁶⁰ Asyut, pp. 74-75.

⁶¹ Kraay (above, n. 49), p. 49; Asyut, p. 19. See also above, n. 4.

⁶² If the date of 520 for the unpublished hoard from Sambiase should ever prove correct (see n. 44, above), then that hoard takes precedence over both Taranto and Selinus for Corinth's earliest appearance in the west.

cance for comparative burial dates that two turtles in Selinus belong to group 3.

Likewise, the presence of two or three medium flan incuse pieces among the Metapontum contents of Taranto is not sufficient reason in itself to make Taranto later than Selinus. It is only natural that issues of Metapontum from Taranto should far outweigh those represented at Selinus, where it is surprising to find Metapontum coins of any class in this early period. The question is whether a slightly earlier burial date for Selinus can be considered on other grounds.

A more important barometer for the dating of Selinus might be the presence in Taranto of five Athenian owls, all from Seltman's group H, now accepted as the earliest, according to Kraay's reclassification. 63 No owls turned up in the Selinus hoard. In view of the preponderance of coins from Aegina and Corinth, the Athenian mint is doubly conspicuous by its absence, and one is forced to ponder the reason for its omission. Did the Selinus hoarder purposely exclude coins on the Attic standard, or was it that the change in type had not yet had time to establish the owls as circulating currency? Here the issue is compounded by the alternate dates assigned to the introduction of the owls at Athens. Kraay⁶⁴ favored a "Hippian" 527/520 date for the beginning of the owls, while the authors of Asyut support a "Cleisthenic" date of 506.65 These dates, in turn, suggest 515 or 500 B.C., respectively, for the first Athena heads at Corinth. An intermediate date of 515 for the earliest owls is upheld by J. H. Kroll.⁶⁶ The Selinus hoard does not reconcile the discrepancy of twenty years between the two poles of thought. However, it should be noted that the presence of bars and ingots both at Selinus and at Taranto indicates a fairly early stage of coinage in a region where uncoined silver was still a readily acceptable commodity, and before silver coins were overvalued. Both deposits are bullion hoards composed of indiscriminate weight standards, and it seems doubtful that the owner of the Selinus hoard would



⁶³ Kraay (above, n. 49), pp. 43-68, especially pp. 54-55.

⁶⁴ Kraay (above, n. 49), pp. 58-59.

⁶⁵ Asyut, pp. 56-68, 259-421. See also Kraay's review of Asyut (above, n. 52), pp. 195-96.

 $^{^{66}}$ "From Wappenmünzen to Gorgoneia to Owls," MN 26 (1981), pp. 1–32, with chronological summary on p. 30.

have chosen to refuse coins of Attic weight. It would be more likely that Selinus was closed before the owls had begun to circulate in any great number, and that for one reason or another, none was destined for Selinus around the time that a few pieces entered Taranto.

Kraay⁶⁷ suggests that the coins came into the Taranto hoard by way of Egypt, as attested by the several chisel cuts. This route seems an unlikely one for the foreign element in Selinus. No coins have received hack marks and, unlike Taranto where some twenty foreign mints are represented, Selinus is not composed of the scattered mixture of coins that characterizes Near Eastern hoards. It is basically limited to large numbers of Aeginetan and Corinthian staters that must have come directly from Greece at approximately the same time during a trading voyage or voyages to Sicily, where Selinus was the final port of call. As stated earlier, the condition and die link pattern of the majority of Corinthian staters in particular suggest that their departure took place not too long after they had left the mint. Direct travel time for these two groups would have been far less than it would have taken similar and other foreign coins to reach Taranto indirectly from the Near East. These factors, taken together with the inclusion of fifth century Metapontum issues and a few of the earliest Athenian owls in Taranto combine to indicate that the foreign coins reached Selinus a few years before similar issues reached Taranto. These coins were then combined by the owner with local issues, with the few stragglers from other western mints, and with the uncoined silver that had perhaps come into his possession at an earlier date. We conclude that the Selinus hoard was closed in the last decade of the sixth century B.C.

In any case, it can no longer be maintained that the Taranto hoard provides the only hoard evidence for the early importation of foreign coins into the west, nor that until 400 B.C., the only imported coins into Sicily were Athenian. The mints of Aegina and Corinth were offering a possible source of silver to Sicilian mints one century earlier than previous hoard evidence has allowed.

67 ACGC, p. 326.



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SOME ARCHAIC BOVINE CURIOSITIES

(PLATE 16)

JONATHAN KAGAN

There is a group of uncertain archaic silver coins which has as an obverse type a standing ox or bull with an incuse punch for the reverse. Such coins have been attributed to places as diverse as Athens, Euboea, Macedonia, Calchedon, and Lycia. The appearance of a hitherto unrecorded variety gives occasion to collect the known coins for reexamination.

1. Obv. Ox standing l. on ground line; above, dolphin l.

Rev. Incuse square diagonally divided A didrachm, 8.43 g, Plate 16, 1 Private collection

There is some surface corrosion and light pitting. The coin shows toning characteristic of an old collection rather than a recent hoard find.

No obvious mint attribution comes to mind for this new specimen. The association of an ox and dolphin, however, is not unprecedented. In a very different style, there exist a hemistater and two smaller fractions attributed to the Ichnai. The obverse has, enclosed in a dotted circle, a kneeling ox with its head reverted and a small dolphin in the upper left field. The reverse has a four-spoked wheel characteristic of this Macedonian tribal coinage. The coinage of the Ichnai, based on

¹ Die Antiken Münzen Nord-Griechenlands, ed. F. Imhoof-Bloomer (rpt. Bologna, 1977), vol. 3, pp. 64-65, pl. 14, 13-15.



the evidence of Asyut, is likely to date from the early fifth century.² The weight standard of the Ichnai, Raymond's series 1 Macedonian, based on a 9.82 g stater,³ is different from the new coin. Also in Macedonia, an ox and dolphin can be found on series 1 hemistaters and series 2 diobols attributed to the Orrescii.⁴ The reverses are shallow quadrapartite incuse squares typical of the region in the early fifth century.

At 8.43 g, this standing ox with dolphin is probably a didrachm on the Euboeic/Attic standard. The style, especially of the reverses, suggests that this uncertain coin is likely to be earlier than the tribal coinage of the Ichnai or Orrescii. The symbols of an ox and a dolphin are, if not in combination, sufficiently common, however, that one cannot argue that the coin influenced the Macedonian issues, but it is possible.

The appearance of a cow/bull with a dolphin can be found on postarchaic issues of mints such as Poseidonia and Byzantium. The case of Byzantium is particularly interesting in that there is no known archaic silver coinage from the city. For that matter, the same can be said for its metropolis Megara. It has been noted that Byzantium chose a "remarkably archaic" design when the mint became active in the fourth century. The likelihood, however, that this coin represents a hitherto unknown early striking of that city must be deemed remote.

The 8.43 g weight of this uncertain coin is worth further discussion. The didrachm denomination is typical of the Athenian wappenmunzen. The slightly spread flan, the small reverse punch, and most importantly the presence of the dolphin as a secondary symbol (unprecedented in the Athens series), however, prevents this attribution. The dolphin, while eliminating Athens, suggests a Cycladic mint. Its presence as a secondary symbol is reminiscent of the didrachms of Paros, the various coinages of Ceos or the small dolphins above the lyres of some of the



² M. Price and N. Waggoner, Archaic Greek Coinage: The Asyut Hoard (London, 1975), pp. 29-30.

³ Doris Raymond, Macedonian Regal Coinage to 413 B.C., ANSNNM 126 (1953), pp. 23-24. Raymond suggests that there were three different weight standards: the first was based on the Thraco-Macedonian stater of 9.82 g; the second was based on a Greek drachm of 3.27 g with a tetradrachm of 13.09 g; and the third was based on a Greek obol of .61 g with a didrachm of 7.36 g.

⁴ Imhoof-Bloomer (above, n. 1), p. 90, pl. 18, 5 and 8.

⁵ C. M. Kraay, Archaic and Classical Greek Coins (London, 1976), p. 259.

archaic didrachms of Delos. The weight is a problem here. Only Delos, of the known mints, used the Euboeic/Attic standard.

That standard was widely used in Chalcidice. The bull appears, for example, on the coinage of Dicaea and Acanthus. The uncertain Thraco-Macedonian cow and calf staters sometimes attributed to Ennea Hodoi may also have been struck on the Euboeic/Attic standard.6 Macedonia is a possibility, but this coin is sufficiently different in type and fabric from the known coinage of this region that no certain identification is possible.

This leaves Euboea itself for consideration. While we have described the coin as a Euboeic didrachm, that denomination actually leads to some problems in hypothesizing a Euboean mint. The earliest coins of Chalcis are not divided into drachms and didrachms but into thirds and sixths. This division was followed in Euboean colonies in the west such as Himera, Naxos, and Zancle. The earliest one-sided coinages of Eretria and Carystus survive only as tetradrachms.⁷ There is no way to know whether divisions were made into thirds or halves. The early onesided tetradrachms of Eretria and Carystus have as obverses a heifer scratching its ear with a mill sail reverse. The Carystus coin is identified by an abbreviated obverse inscription. The coins are very similar to the more common two-sided coins that follow shortly thereafter. The style is quite distinct from that of this coin. Perhaps this is an even earlier striking of Eretria or Carystus. Chalcis's first coins with the quadriga type are different in style from the eagle and wheel type that are also archaic in date. It may be significant that Asyut contained a one-sided coin of Carystus and also an eagle/wheel coin of Chalcis but no specimens of the earlier quadriga types. Histiaea, the "fourth city" of Euboea, which has no known archaic coins is also presumably a candidate. It was certainly important enough to have had a mint prior to Athenian domination.

In summary, while there are several possibilities, there is no evidence sufficiently compelling to justify even a tentative attribution.

- 6 Traité 21, pp. 1293-96.
- ⁷ Kraay (above, n. 5), p. 91.



2. Obv. Bull/ox standing l.

Rev. Incuse square diagonally divided
AR didrachm? Plate 16, 2
Seltman, Athens. S.24 (P16, A17) 7.74 g⁸ = Bourgey, 4 Mar. 1960, 56b, 7.55 g

As the current provenance of this coin is unknown, there is no way to check the discrepancy in weights. In either case, given the condition of the coin, it is possible that this is a Euboeic/Attic didrachm. The coin was in Seltman's personal collection and he discerned "traces of a linear circle indicating a shield" which helped his attribution of this coin to the Athenian wappenmünzen series. Robinson, followed by Hopper, found no evidence in the photograph in support of a circle. Robinson, in rejecting the attribution to Athens cites the coarseness of style, the difference in the incuse punch in that it is "smaller and meaner," and the existence of "a tetradrachm and didrachm of the same issue — the latter in the British Museum." A tetradrachm would certainly make it unlikely that the coin in question was a wappenmünzen. Robinson unfortunately neither illustrated nor further identified this tetradrachm or didrachm.

There is some doubt as to whether Robinson's tetradrachm and didrachm are indeed of the same issue as Seltman's example. Regardless of this, Robinson's stylistic arguments are in and of themselves decisive in eliminating Athens. Also, should the Seltman specimen be from the same mint as the first coin, the presence of the dolphin argues against Athens. In fact, the oxen are very similar. The Seltman specimen is too worn to be sure, but they could almost be from the same dies. The dolphin would then just be off to the top of the flan of the Seltman piece. That may have accounted for the traces Seltman noticed. The reverse punches are also similar. Hopefully, the actual coin will turn up and make a direct comparison possible.

- ⁸ C. T. Seltman, Athens: Its History and Coinage before the Persian Invasion (Cambridge, Eng., 1924), p. 155, 24.
 - R. J. Hopper, "Observations on the Wappenmünzen," Essays Robinson, p. 30.
- ¹⁰ E. S. G. Robinson, rev. of Seltman (above, n. 8), NC 1924, p. 331, and Hopper (above, n. 9), p. 30.
 - 11 Robinson, p. 331.



3. Obv. Ox standing l., hooves off-flan Rev. Incuse square diagonally divided A didrachm, 7.88 g, Plate 16, 3 BM 1895.6-5.2

This coin is, in all likelihood, the didrachm to which Robinson referred. The ox is close in style to the first two coins but slightly more sophisticated. The horn is curved and the ear defined. The body is more lifelike. The weight again, though on the light side, points to the Euboeic/Attic standard. The coin offers no further clue as to attribution.

4. Obv. Bull standing I. on ground line

Rev. Crude incuse square

AR tetradrachm Plate 16, 4

J. N. Svoronos, L'Hellénisme primitif de la Macédoine (Paris, 1919), p. 16, 32, pl. 11, 19, 12.97 g = Auctiones A.G. Basel 11, 30 Sept. 1980, 83, 12.69 g

The tetradrachm to which Robinson referred is perhaps coin 4. This unique coin looks more weakly struck than worn. It is on an exceptionally broad flan. The coin is stylistically different enough from the others discussed that it is probably unrelated. The weight (regardless of the variance) is also quite distinct and points unambiguously to Thrace or Macedonia. The coin is a tetradrachm on Raymond's series 2 Macedonian standard (13.09 g theoretically). Coins of this denomination and weight were struck, for example, by Alexander I of Macedon. It seems unlikely that it was produced by the same mint as the first three coins. That this tetradrachm is Thraco-Macedonian is no reason to assume that the didrachms are from the same region.

Obv. Ox standing 1.Rev. Quadrapartite incuse squareA didrachm? 7.04 g, Plate 16, 5

SNGAshmolean 2397

This possibly unique coin may also be from northern Greece. It is the weight standard again that gives a clue to its origin. The coin is



probably a didrachm of Raymond's series 3 Macedonian standard (7.36 g theoretically). The denomination can be found, for example, in Thrace at Dicaea and Maroneia.

Robinson in his critique of Seltman referred to two other coins that also should be discussed here, 6 and 7.

- 6. Obv. Bull standing l. on double ground lines with hatching between them; below bull, seven-pointed theta symbol. In upperfield, test trench.
 - Rev. Incuse square unequally divided. (Double struck?)

 A didrachm, 8.58 g, Plate 16, 6

This coin was discovered in the 1860 Mit Rahineh hoard (IGCH 1636) and was attributed by de Longperier¹² to Chalcedon. Babelon,¹³ followed by Robinson,¹⁴ felt that the symbol beneath the bull was indicative of a Thraco-Macedonian mint. The theta symbol has parallels at mints such as Acanthus and Aegae.

7. Obv. As 6, theta symbol with six points. No test trench.

Rev. As 6
A didrachm, 8.54 g, Plate 16, 7
MFA 2318, ex Warren (1226)

Obviously this coin is very similar to 6 and the dies appear to be by the same hand. Regling attributed this coin to Lycia. Babelon however, as with 6, preferred the Macedonian region. 15

The Mit Rahineh hoard contained coins from northern and central Greece, the Aegean islands, Asia Minor, Cyprus, and Cyrene. It is probably the earliest hoard of silver from Egypt. The deposit date was probably between 525 and 500 B.C.¹⁶ A Macedonian origin for 5 and 6



¹⁸ A. de Longperier, "Monnaies du Sérapeum de Memphis," p. 421, 14; M. J. Price, "Mit Rahineh (1860): *IGCH* 1636," Coin Hoards 3, p. 7, 21.

¹⁸ Traité 21, p. 1827.

¹⁴ Robinson (above, n. 10), pp. 331-32.

¹⁶ Traité 21, p. 163.

¹⁶ Kraay (above, n. 5), p. 297, for the earlier date, and Price (above, n. 12), p. 8, for the later date.

seems quite possible, although the theta symbol alone is not conclusive. There are no known Euboean types among the 23 recorded coins from the find.

8. Obv. Ox standing 1. on single ground line Rev. Incuse square in Union Jack pattern AR didrachm (?) 9.15 g, Plate 1, 8
ANS

Hopper, in questioning Seltman's Athenian attribution of 2, noted another coin unknown to Robinson: "Professor W. Wallace of Toronto has mentioned to the author a coin in his collection with a rather dissimilar [to 2] 'cow' type which was found in Euboea at Carystus, corroded, but with an incuse 'like the first Carthaea coin in Seltman's plate 24."

This coin fortunately has a find spot. Certainly, discovering a hitherto unknown variety of an ox type in Euboea would lead to the natural assumption that the coin was from the island. There are two things about this coin that distinguish it from 1, 2, and 3. One is that the reverse type is more complex. As such it is close in style to Aeginetan or other island coins. The second feature is the weight of the coin, 9.15 g, which is hard to explain. It does not fit easily into any known weight standard. It would be convenient to believe that the coin is simply an unusually heavy Euboeic/Attic didrachm rather than a light Thraco-Macedonian stater. There may be some surface accretion which more than makes up for the corrosion. There is also a globule of silver protruding from the reverse. It looks almost as if the flan had not been properly trimmed. Whatever the case, the weight presents a problem in advocating too forcibly a Euboean attribution; though given the find spot, the coin should, perhaps, be given the benefit of the doubt.

9. Obv. Ox standing l.

Rev. Incuse square divided diagonally by two or three lines A didrachm, 8.42 g
Hirsch 33, 17 Nov. 1913, 714

¹⁷ Hopper (above, n. 9), p. 30.



One final coin appears to be known from a single auction catalogue. Seltman either was unaware of it or considered it a different issue from 2. The catalogue suggests Euboea as a possible attribution. The coin is similar to 1, 2, 3, and 8 but stylistically somewhat different in the handling of the ox. It seems fuller, less modeled and with a less prominent horn.

In conclusion, it is not possible to identify with certainty the mint of any of these coins. Only the tetradrachm and Oxford didrachm seem certainly northern. The two coins with the theta symbol may also belong to a Macedonian mint. The weights of these coins are clearly Euboeic/Attic so a mint somewhere in Chalcidice is possible. The early date of the coins as confirmed by the Mit Rahineh hoard, however, must leave open the possibility of other provenances.

The Wallace coin raises the question whether there was coinage in Euboea at mints like Eretria and Carystus that predate the one-sided scratching heifer type that, in the case of Carystus, was found in Asyut. Hoard evidence indicates that the beginning of two-sided Eretrian coinage must be closely contemporary with the early Athenian owls. If, for instance, Eretria began coining at the same time as Athens, then there would be room to postulate an earlier coinage contemporary with the first wappenmünzen and the quadriga coins of Chalcis. If one accepts this, then the Seltman coin, the didrachm in the British Museum, the Hirsch coin, and the ox and dolphin are all candidates for an early Euboean coinage. More than this it is impossible to say. Hopefully, the discovery of some new specimens with certain find spots will enable actual attributions to be made.

¹⁸ Price and Waggoner (above, n. 2), pp. 18–19. The author thanks the following people for their help in preparing this article: Nancy Waggoner (ANS), Martin Price (BM), Malcolm Hay, and Basil Demetriadi. None, of course, is responsible for the views expressed herein.



JOHN D. MAC ISAAC

ἀλλὰ γὰρ τῶν μὲν μεγάλων πόλεων, εἶ τι καλὸν ἔπραξαν, ἄπαντες οἱ συγγραφεῖς μέμνηνται. Έμοὶ δὲ δοκεῖ, καὶ εἶ τις μικρὰ πόλις οὖσα, πολλὰ καὶ καλὰ ἔργα διαπέπρακται, ἔτι μᾶλλον ἄξιου εἶναι ἀποφαίνειν.¹

The problems of treating the base metal coinages of the smaller Greek towns are twofold. Few specimens are known, so that even the determination of the series content may be difficult. Correspondingly, fewer specimens still will derive from reliable archaeological or hoard contexts, thus making a tight chronology extremely difficult to obtain. Phlius proves no exception to this usual state of affairs. Two further circumstances, however, permit an advance in the state of our knowledge of her numismatic history. The first of these is the fact that the usual coin types of Phliasian bronze tend to copy her silver coins, allowing us to use this category of information in this inquiry. The second is the fact that more than 70 bronzes of Phlius have been recovered in the course of the excavations conducted by University of California, Berkeley, and the American School of Classical Studies at the Zeus Sanctuary at Nemea.² These discoveries nearly doubled the known spec-

- ¹ "For while all the historians make mention of the large states if they have performed any noble achievement, it seems to me that if a state which is small has accomplished many noble deeds, it is even more fitting to set them forth." Xenophon on Phlius, *Hellenica* 7.2.1.
- ² Stephen G. Miller, "Excavations at Nemea...," *Hesperia* 44-53 (1975-83), esp. 49 (1980), p. 194, 50 (1981), pp. 62-63, and 51 (1982), pp. 35-36.



imens of Phliasian bronze from excavation contexts and augmented the overall known examples by nearly 25 percent.³

Scholarly attention to the numismatics of Phlius has been slight. No update of the contents and chronology has been attempted in the past 70 years. The work still most frequently referred to is Percy Gardner's British Museum Catalogue, The Greek Coins of the Peloponnesus. One finds there the simple statement that the coinage of Phlius deserves no comment⁴ and a vaguely dated arrangement of her coinage based on style, covering the period 430-280 B.C. The holdings of the British Museum were deceptively thin in Phliasian bronze at the time this catalogue was issued. Barclay Head, in his Historia Nummorum, was able to add several more types to the earlier list, most notably, the Severan Imperial issues.⁵ He preferred to terminate the autonomous series of Phlius with the Macedonian conquest in 322 B.C. Still, the bronze coinage warranted only the remark that it resembled the silver for the most part. The only comprehensive treatment of Phliasian bronze in the Greek period was by J. Babelon in his Traité des Monnaies Grecques et Romaines.7 Babelon omits the sixth century B.C. initiation accepted by Head,8 adds two new types of bronze and confirms the existence of an iron series, but concurs in ending the coinage in 322. Here the scholarship has rested.

Hoards containing Phliasian silver have appeared in the intervening period, but they have done little except confirm the proposed sequence of issues. An advance in chronology awaited Hackens' study of monetary circulation in the Peloponnesus during the third century B.C. 10 Among the hoards he examined was that of Mycenae of 1895, and he

- ³ See the respective totals in Tables 1 and 2.
- 4 BMCPeloponnesus, p. xxxiv.
- ⁵ HN, p. 345.
- ⁶ HN, p. 345.
- ⁷ Traité 3, pp. 514-15.
- ⁸ A latter day attempt to revive an early series for Phlius was made by Miriam S. Balmuth, "Athens or Phlius?" Schweizer Munzblatter 61 (Feb. 1966), pp. 1-3, but this view won little acceptance.
 - IGCH 40, 57, and 303.
- ¹⁰ Tony Hackens, "A propos de la circulation monétaire dans le Péloponnese au 111° s. av. J.C.," Antidorum W. Peremans sexagenario ab alumnis ablatum, Studia Hellenistica 16 (Louvain, 1968), pp. 69-95.



noted, contrary to the initial publication, that the Ptolemaic component consisted of issues of Ptolemy II, not Ptolemy I. Since those coins were quite worn and countermarked, he was quite justified in moving the date of deposit to 250-240 B.C.¹¹ Further reinforcing this date was the pattern he detected in the composition of silver hoards in the Peloponnesus during this epoch. There were substantial and demonstrable differences between hoards laid down in the first quarter of the third century B.C. and those to be associated with the wars of the Achaean league against Cleomenes in the 220s. The Mycenae hoard is transitional in this scheme. Most importantly, it contained 133 triobols and trihemiobols of Phlius, the largest concentration of Phliasian coinage ever discovered. Those issues traditionally assigned to the middle of the fourth century B.C. were, like the Ptolemaic coins, quite worn, but those of the bull/ Φ in ivy wreath, held by Head and Babelon to date before 322 and by Gardner to just precede 280, were quite fresh. These issues were comparable in wear to some 3,000 coins of Argos and Corinth, also in the hoard, of classes known to have been struck well into the third century B.C.¹² Thus the date of Gardner must be preferred to that of Head and Babelon for this final issue of Phlius in silver and, by analogy, the bronze with the same types. If any adjustment, in fact, were to be made, the lower end of the series might be dropped a further decade. The last pre-Roman issue in the name of Phlius was that struck for her as a member of the Achaean League, which must belong to the period after 228 B.C.

The establishment of the upper limit for Phliasian bronze is less easy, and is part and parcel of the larger question of the introduction of coined bronze to the Peloponnesus. There is, too, the complication of the iron money of Phlius. Each of these factors will be examined.

M. J. Price has given the only modern summary of our knowledge of the origins of bronze coinage in mainland Greece.¹³ His conclusions do not radically depart from the traditions of the last century.¹⁴ which



¹¹ IGCH 171.

¹² Tony Hackens, "A propos du monnayage d'Argos," Actes du 8me congres international de numismatique. New York-Washington, septembre 1973 (Paris, 1976), p. 84.

¹³ M. J. Price, "Early Greek Bronze Coinage," Essays Robinson, pp. 90-104.

¹⁴ See also Colin M. Kraay, Archaic and Classical Greek Coins (London, 1976). p. 100, where much the same traditional thinking is expressed.

made the first use of bronze as a regular coining metal a phenomenon of the second quarter of the fourth century B.C. In Price's catalogue, however, is to be found clear evidence that dynasts in Macedon and Lycia were producing bronze coins not later than the 390s and, in the case of Archelaus I of Macedon, this activity could have begun as early as 410.15 Excavators at Corinth have long objected to the mid-fourth century B.C. date that numismatists had assigned the first bronze at Corinth, 16 prefering a date at or just before 400. In all reasonableness, a phenomenon known to have been entrenched in the Greek west by 450 and wide spread in the Greek north and east by 390, ought to be sought in the decade centered on 405 for the mainland.¹⁷ Phlius moved in the economic orbit of Corinth and Sicyon and would have begun her own bronze series after their example. This assumption seems verified by the fact that the earliest of the Phliasian bronze issues (Bull l., A, 🕷) imitates a silver issue that belongs, in all probability, to the last quarter of the fifth century B.C.¹⁸

The virtually unknown iron series of Phlius could be a key to the interpretation of the Phliasian bronze chronology, but there is little evidence about its function or date. Fewer than two dozen examples of this numismatic oddity are known, issues assigned to Argos, Tegea, and Heraea, as well as Phlius. Only one specimen, now in the National Numismatic Museum at Athens, derives from an archaeological context. Scholars are agreed that these pieces are genuine, but on little



¹⁵ Kraay, pp. 91 and 101.

¹⁶ Josephine M. Harris, "Coins Found at Corinth, 1936-1939," *Hesperia* 10 (1941), p. 149.

¹⁷ Jennifer A. Warren, "The Autonomous Bronze Coinage of Sicyon," NC 1983, pp. 25–26, starts the bronze of Sicyon at 420–400. The director at the Corinth excavations, Charles K. Williams III, would also place the earliest Corinthian bronze in the late fifth century (Warren, p. 33, n. 46), but a slightly later date is preferred by Joan Fisher in her forthcoming monograph on the Pegasus/trident bronzes. The projection of the Athenian $Ko\lambda\lambda\delta\rho o$ back close to 400 (Price [above, n. 13], p. 100) and the archaeological evidence that the bronze mint in the Athenian Agora began production in the late fifth B.C. bolster this contention as well.

¹⁸ BMCPeloponnesus, p. 33, 5.

¹⁹ From the old excavations of the Apollo shrine at Epidaurus, but without a good stratigraphic context.

else about them. One school²⁰ holds that these issues are one of the last descendants of an archaic Peloponnesian iron money, preserved elsewhere only by the Spartan iron spit "obols." This view sees the iron series as the immediate precursor of the regular bronze coinage, datable to 425-400. The other main opinion²¹ is that these coins are not a fractional series at all, but siege money or money of necessity. It is thought that they would have been struck, like the bronze tetradrachms of Athens, during a period of extreme financial distress and represent silver denominations. The period to which they are assigned is 370-350 B.C. when, it is felt, all of the issuing states were experiencing difficult times. At the present time it is not possible to judge between these proposals, and we must await better archaeological contexts to decide the matter.

THE MAIN ISSUES OF PHLIASIAN BRONZE AND THEIR DATES

Of the twenty-five types of bronze attributed to Phlius (Tables 1 and 2), only types A, B, D, G, I-K, and N-Y are certainly regular bronze issues. The remainder represent coins incorrectly assigned to Phlius or bronze strikes of her regular silver issues (usually, although not always accurately, called trial strikes). The regular issues divide into two groups, types A, B, D, G, I, J, K, and N, the classical and hellenistic bronze of Phlius, and types O-Y, her Greek Imperial series. The autonomous series divides into three successive issues, spanning the period ca. 400 to ca. 250. These issues consist of two denominations. In issue 1 types A, D, and I are smaller and type B is larger; type G is the unit in issue 2, type N its double; type J is smaller and type K is larger in issue 3. In weight and module the much more common smaller coins duplicate the Pegasus/trident type of Corinth and the smaller doves of Sicyon.

Issue 1 [ca. 400-350 B.C.]

Type A, imitating as it does the earliest silver type of Phlius, stands at the head of the Phliasian bronze series. Its weight (between 1.3 and

- ²⁰ Price (above, n. 13), p. 100.
- 21 Traité 3, pp. 466-67.



TABLE 1

TYPE	SITE								
OBVERSE	NEWEA*	CORINTA*	SAIINS	5,764	70792				
BULL L	20	13	7	9	49				
BULL L	3	-	6	-	9				
+BULL L. Ep.	-	-	-	_	0				
BULL R.	2	-	-	-	2				
BULL PROTOME	_	-	-	-	0				
DAPOLLO APA	_	-	-	-	0				
BULL L	20	4	2	3	29				
OHEBE Ø	-	-	-	-	0				
BULL L. P	7	-	2	-	9				
BULL L	_	2	1		3				
ASOPOS	-	-	-	-	0				
DIONYSOS	_	-	-	-	0				
FACING ATHENA P	1	_	-	_	1				
ATHENA BULL	3	2	9	1	15				
SEPTIMIUS BULL	-	_	-	_	0				
SEPTIMIUS	_	_	. —	1	1				
SEPTIMIUS	_	-	_	_	0				
J. DOMNA AESCULAPIUS	_	_	_	-	0				
J. DOMNA TYCHE	_	_	-	-	0				
J DOMNA FIGURE		_	_	1	ı				
CARACALLA	_	_	_	1	1				
GETA	_	_	_	_	0				
GETA	_	_	_	_	0				
GETA	_	_	_	-	0				
TWO FEMALES					0				

** ATHENS, HALIEIES, MYCENAE, KENCHREIAI, DURA EUROPOS

- * SEE NOTE 22
- + PERHAPS A LEGITIMATE VARIETY OF TYPE A LIKE A SIGNED PIECE FOUND AT THE DEMETER SANCTUARY (NOTE 27), BUT NOT YET RECOVERED ARCHAE— OLOGICALLY.
- □ BRONZE STRIKE OF SILVER DENOMI-NATION BMC PELOPONNESOS P.34 #10
- △ THIS UNIQUE SPECIMEN IS PROBABLY A
 TRIAL STRIKE FOR A SILVER ISSUE
 NOT APPROVED
- THE OBVERSE DIE IS THE WELL KNOWN
 SILVER DENOMINATION BMC PELOPONNESOS P.34 #12, THE COMBINATION UNIQUE
- MHILE THESE TYPES ARE NOT INAPPRO-PRIATE FOR PHLIUS, THIS COIN LACKS THE CHARACTERISTIC & OF THE BRONZES. ONLY ONE EXAMPLE IS KNOWN, IN BM.
- O COIN OF PHOCIS BMC CENTRAL GREECE P. 20 # 66.

		_				_	ABLE	-						
TYPE		C	OLLE	CTIO	N OI	R SAI	LE CA	ATAL	og					
DBVERSE	ANS	4SCS	4THENS	MUSE'N	COPENHACE	HUNTERIA	PARIS	COLLER *	SALE + ONS	7074C6S				
BULL L.	6	2	16	2	-	1	2	6	4	39				
BULL L	_	-	T	-	_	-	_	_	_	1	* BUNDBURY CORPUS CHRISTI COLLEGE			
BULL L Ep.	_	-	1	-	-	-	_	3	_	4	CREDIT BANK			
BULL R.	_	-	1	-	-	-	_	_	_	1	DE LUYNES Dressel			
BULL PROTOME	_	-	_	-	_	_	1	_	_	1	MC CLEAN			
APOLLO AAA		-	-	-	_	_	_	-	1	1	POZZI			
BULL L.	4	1	5	3	1	1	1	9	3	28	RASCHE			
неве	_	_	_	_	_	-	_	1	_	1	THOMSEN			
BULL L D	_	-	_	-	-	-	_	_	_	0	WEBER			
BULL L. P	_	-	3	1	-	1	1	_	1	7	+ ARS CLASSICA II			
ASOPOS D	_	-	-	1	1	-	1	1	2	6				
DIONYSOS	_	-	_	1	-	-	_	_	_	1	HIRSCH III			
FACING ATHENA P	_	-	2	-	-	-	2	1	_	5	MUNZEN UND MEDAILLION 23			
ATHENA BULL	_	-	2	-	1	-	_		2	5	SEABY			
SEPTIMIUS BULL	_	-	1	-	_	-	-	_	_	1	(WHERE POSSIBLE, DUPLICA'			
SEPTIMIUS	_	_	-	-	-	-	_	_	_	0	LISTINGS HAVE BEEN AVOIDED			
SEPTIMIUS SEPTIMIUS	_		_	-	-	-	-	1	_	1				
J. DOM NA	_	-	1	_	_	1	_	_	_	2				
J. DOM NA	_	1	_	-	_	-	-	_	_	1				
J. DOMNA FIGURE	_	-	_	-	_	-	_	_	_	0				
CARACALLA	_	_	1	-	-	-	-	_	_	1				
DIONYSOS	_	+	1	-	_	-				-				
GETA		_	_	-	_	_	-	1	_	-				
GETA	_	_	_	-	_	-	_	1	_	1				
GETA TWO FEMALES	1	_	_	_	_	_	_		_	1				
DIONYSOS	,									,				

1.5 g) and diameter (12 to 15 mm) made it a readily acceptable entrant to the fractional bronze koinon of the northern Peloponnesus. Of the autonomous bronze of Phlius it is by far the most common. Forty percent of all known specimens are of this type. It seems quite clear that the intended reverse was , like its silver prototype, but the die sinker occasionally erred and , , , , , and were produced. Nemea 2301 even shows . None of these lapses is attested by more than one or two examples. Types D and I are grouped as subclasses of type A in issue 1, rather than regarded as simple engraving errors, because of some distinct characteristics and/or their frequency of occurrence (type C may also join this category if it is ever verified archaeologically).

Type D is known from but three examples, but in addition to the reversal of the standard bull left on the obverse, the reverse of all three shows **, not found on type A otherwise. The four pellets of the basic type A are an artistic recollection of the incuse punch, and type D violates that memory by extending the hasta of the phi beyond the square they delimit. The tall phi is a characteristic of issue 2, so type D should belong towards the end of issue 1.

Type I would seem to be the simplest engraving error of all, omitting all the pellets around the phi. Nonetheless, it occurs in nine examples, and all share, as well, a slightly concave reverse and a regularly smaller and thicker flan. This variety as well should be placed at the end of issue 1.

At some time after type A was introduced,²⁸ type B was added as its double. It weighs a little over 3 g and is between 18 and 20 mm in diameter. Like types D and I, its existence has not previously been noted. It is possible, since it is otherwise identical to type A, that a few further examples are hidden in those published pieces that record neither weight nor diameter. This dichalk, like its analogues in issues 2 and 3, did not travel as widely in the Peloponnese as its smaller companion. Both Corinth and Sicyon also issued dichalks intermit-



²² In addition to the coins listed in Table 1, there were 19 additional coins from Nemea and 42 from Corinth that were too worn or damaged to permit assignment to a definite class. They all are types A, D, G, or I, however.

By analogy to Corinth and Sicyon, where dichalks were clearly a later invention (Warren [above, n. 17], pp. 34-35).

tently, but there was not the standardization of weight and module that their smaller coins maintained, and this circumstance may have limited their acceptability in other towns.

The only firm date for issue 1 is provided by a type A piece in the Corinth (Abaton) hoard, which closed ca. 338 B.C.²⁴ This piece is somewhat worn and apparently older than at least some of the 50 Pegasus/trident bronzes that accompany it in the deposit.

Issue 2 [ca. 350-320 B.C.]

Issue 2 cannot be long separated from issue 1. The reverse of the smaller denomination type G, with its tall phi, is quite similar to type D. The reverse of the larger type N is paralleled by one of the silver obverses of the bull/wheel trihemiobols whose issue appears to belong to the mid-fourth century $B.C.^{25}$

Type G is typologically later than type A in that the pellets, the standard adjunct of issue 1, are reduced to 2, and they are centered on the horizontal axis of the reverse's phi. The selection of a Corinthian style Athena head for the obverse of type N may be a reflection of the close economic ties between the two towns.²⁶ The transfer of the earlier obverse type of the bull to the reverse is typical of type evolution.²⁷ The dating of issue 2 comes from the find of a type N piece in the habitation fill of the hellenistic village of Mycenae.²⁸ The coin is in good condition, and the early fill from which it comes has been dated late fourth century B.C. ²⁹ Paralleling that dating is a type G find, Nemea C95, the



²⁴ IGCH 64.

²⁵ A fairly fresh example of this series was in the Peloponnesus hoard (1974-75), Coin Hoards 3, 32; fig. 11, 8; the hoard was dated 280 B.C.

²⁶ Xenophon, Hellenica 7.2.17.

²⁷ About one-quarter of the type N pieces have an engraver's mark in the reverse exergue; A is the usual form, but J. A. Dengate ("Coins from the Mycenae Excavations, 1939–1962," Annual of the British School at Athens [1974], p. 100), read the Mycenae specimen as A. The only other signed Phliasian coin, pending archaeological confirmation of type C, was a type A piece from the Demeter sanctuary at Corinth, Hesperia 41 (1972), p. 328, with the letters 43.

²⁸ Dengate, p. 100.

²⁹ Dengate, p. 95, n. 4; p. 99, n. 19.

deposit containing it (S-17-5) dated to mid-fourth century B.C. or a little later.

Issue 3 [ca. 280-250 B.C.]

We established the probable range of dates for issue 3 (type J small, type K large) in defining the lower limit of Phliasian autonomous mintage. That the balance of the series belongs after 280 is strongly suggested by the fact that neither type is recorded among the finds at Nemea. The two earlier issues are well represented at the Zeus sanctuary and, even if the third were a much smaller issue than the earlier two, some losses should be expected. The removal of the games to Argos triggered a sharp decline at Nemea, and this event has been set by the excavator mid-way in the first quarter of the third century B.C.³⁰ The two bronze denominations are linked to each other and to the contemporary silver by the shared reverse of phi in wreath. No example of either bronze type has been found in a reliable archaeological context.

The Greek Imperial Series

The Imperial coinage of Phlius is confined to a single issue, to be dated between 193 and 202 A.D.³¹ As now known, it consists of three types for Septimius, three for Julia Domna, one for Caracalla, and four for Geta. We should expect at least one more type for Caracalla to surface eventually.

- 30 Miller (above, n. 2), 51 (1982), p. 35.
- ³¹ There are too few specimens known as yet to say whether there was a common pool of reverses for the imperial family, or whether certain reverses were combined with specific obverses. Most curious is the fact that the actual or alleged find spot of more than half of these coins is Syria or Egypt. Bellinger's suggestion that this issue and other Severan Peloponnesian Imperials ought to be connected with the Parthian campaign of Caracalla, *The Excavation at Dura Europos, Final Report VI: The Coins* (New Haven, 1949), p. 207, bears consideration, provided that it is remembered that there seems no doubt that there were several different issues during this age for such major towns as Corinth and Argos.



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FIVE SELEUCID NOTES

(PLATES 17-18)

ARTHUR HOUGHTON AND WAYNE MOORE

The Notes are arranged chronologically under the following headings:

- 1. New Northeastern Issues: Seleucus I and Antiochus I (AH); Antiochus I of Mints X and Y (AH and WM);
- 2. Some Drachms from the First Reign of Demetrius II in Cilicia (WM);
- 3. Units of the Divine Couple Series of Demetrius II at Nisibis (WM);
- 4. An Unknown Mint of Antiochus VII in Cilicia (AH);
- 5. Seleucus VI at Elaeusa Sebaste (AH).
 - 1. New Northeastern Issues: Seleucus I and Antiochus I;
 Antiochus I of Mints X and Y

Seleucus I

Obv. Head of Heracles in lion's skin r.

Rev. ΣΕΛΕΥΚΟΥ ΒΑΣΙΛΕΩΣ in two lines to r. upward; Zeus seated l. on throne, scepter in l. hand, eagle in outstretched r.; to l., pa; beneath throne. A

Drachm

1. † 4.07. New York, C. Hersh coll. From Afghanistan. Plate 17, 1.



Antiochus I

Obv. Head of Heracles in lion's skin r.

Rev. BAΣΙΛΕΩΣ ANTIOXOY in two lines to r., downward; Zeus seated l. on throne, scepter in l. hand, eagle in outstretched r.; to l., \(\mathbb{P}(?)\); beneath throne, \(\mathbb{A}\)

Drachm

2. † 3.55. New York, C. Hersh coll. From Afghanistan. Plate 17. 2.

Obv. As above; dotted border

Rev. (ΒΑΣΙΛΕΩΣ, off flan in exergue?) ANTIOXOY to r., upward, type as above; to l., > or >; in exergue, indistinguishable monogram; dotted border

Drachm

3. \sqrt{3.99}. Oxford, Ashmolean Museum. Pl. 17, 3.

The monograms of 1 and 2 suggest that these two drachms belong to the same series, but their styles differ widely and the evidence of their inscriptions—both in two lines to the right but one facing outward, the other inward—is ambiguous.¹ More coins are needed to reach a definite conclusion as to whether or not they are from the same mint.

The provenance of the Oxford drachm is not known; it is also almost certainly from an eastern mint, but it has no parallel with any other known series or issue.

Since the publication of ANSMN 29 a number of new silver coins of Antiochus I have appeared which expand the known production of two early Seleucid mints, operating at unknown locations in the area of

¹ At least one other northeastern mint struck tetradrachms under Seleucus I with right field, two-line, inward facing inscriptions, while issuing drachms whose inscriptions faced outwards: C.-Y. Petitot-Biehler, "Trésor de monnaies grecques et gréco-bactriennes trouvé à Aï Khanoum (Afghanistan)," RN 1975, p. 40, 52, tetradrachm; A. Houghton, Coins of the Seleucid Empire, ACNAC 4 (New York, 1983), 1306, drachm (hereafter, CSE). See also ESM 747, a tetradrachm issued in the names of both Seleucus and Antiochus which carries the names of both kings in two lines to the right, the title in the exergue.



present-day Afghanistan, which the authors have for convenience named Mint X and Mint Y.²

Mint X

Obv. Head of Heracles in lion's skin r.; dotted border

Rev. BAΣIΛΕΩΣ in exergue, ANTIOXOY to r., upward; Zeus seated l. on throne, scepter in l. hand, eagle in outstreched r.; to l., Z

Group 1, M beneath throne

Drachm

4. a1 p1 ↑ 3.96. New York, C. Hersh coll. From Afghanistan. Plate 17, 4.

Uncertain group (perhaps group 2)

Hemidrachm

5. aiv piv ← 1.85 Rev. king's title off flan; l. field monogram appears to be **Z** above (?). New York, C. Hersh coll. From Afghanistan. Plate 17, 5.

Mint Y

Obv. Type as above

Rev. Inscription and type as above

Tetradrachm

6. A1 P1 > 16.56. Rev. N of king's name is retrograde; to l., ▶4; beneath throne, ∑. Private U.S. coll. Plate 17, 6.

² For the earlier discussion of Mint X and Mint Y, see A. Houghton and W. Moore, "Some Early Far Northeastern Seleucid Mints," ANSMN 29 (1984), pp. 1-9 (hereafter, "Northeastern Seleucid Mints") which refers to previous studies but could not include the important work of P. Bernard, Fouilles d'Ai Khanoum 4: "Les Monnaies hors trésors, questions d'histoire gréco-bactrienne, Mémoires de la délégation archéologique française en Afghanistan 28 (Paris, 1985). For permitting access to the coins and for providing other essential help in the preparation of this article, the authors are indebted to Michel Amandry (Paris), Georges Le Rider (Paris), Edoardo Levante (Paris), Michael Metcalf (Oxford), and Nancy Waggoner (New York). Prof. Paul Bernard (Paris) has read this paper in draft and offered helpful commentary. Particular thanks are due to Charles Hersh for making his coins available.



Drachm

7. a4 p4 ← 3.33. Rev. to l., ♠; beneath throne, ♠. New York, C. Hersh coll. From Afghanistan. Plate 17, 7.

The drachm, 4, is the first such issue known for group 1 of Mint X. Its attribution is attested both by its monograms and style. The accompanying hemidrachm, 5, has been included because of its general similarity to other fractional issues of Mint X, although its left field monogram differs from the 2 which characterizes other known coins of this city; its attribution should be considered tentative at this time.

Bernard, it should be noted, has recently proposed that Arachosia broke away from Seleucid control and fell under Maurya influence at the end of the fourth century B.C.³ If this hypothesis is correct, Mint X cannot have been in the area of Kandahar, as the authors earlier proposed.⁴

The tetradrachm, 6, is something of a surprise. Heretofore, the known issues of Mint Y were limited to drachms, and there was no indication that the mint itself was more than a peripheral facility producing coinage for local use only. Yet the style of the new tetradrachm and the left field monogram on its reverse, the same as that of a Mint Y drachm, supports the attribution. The known drachms of the series, including 7, were not die oriented. The tetradrachm's inverted reverse die suggests that unlike Mint X, Mint Y may have been influenced by the major provincial mint of Bactra, whose coinage was struck with reverse dies generally adjusted to the 180° position. Other tetradrachms of the series are needed in order to establish the point.

The drachm a4-p4 is apparently from the subseries which includes "Northeastern Seleucid Mints" 7, a3-p3. The left field monogram is the same in each case, and the dies of both coins—in fact those of all the drachms of the Mint Y series—were evidently cut by the same hand.

- ³ Bernard (above, n. 2), pp. 85-95.
- 4 "Northeastern Seleucid Mints," pp. 5-6.
- ⁵ "Northeastern Seleucid Mints,' p. 7, a2-p2. The left field monogram of the drachm is in fact ⋈, not ⋈ as originally catalogued.



2. Some Drachms from the First Reign of Demetrius II in Cilicia

- Obv. Diademed head of Demetrius II r., fillet border
- Rev. Nude Apollo seated l. on omphalos, arrow in extended r. hand, grounded bow in l.; in l. field, symbol; in exergue, monogram
- 8. a1-p1 † 3.75 Rev. ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ ΘΕΟΥ ΦΙΛΑ-ΔΕΛΦΟΥ NIKATOPOΣ; in l. field, longnecked bird; in exergue, ΑΛ. Superior Stamp and Coin, 11 June 1986, 1321. Plate 17, 8.
- 9. a1-p2 ↑ 3.64 Rev. ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ ΦΙΛΑΔΕΛΦΟΥ NIKATOPOΣ; in l. field, owl; in exergue, AC. Private U.S. coll. Plate 17, 9.

Three drachms of Demetrius II's first reign (146/5-143?) share the same obverse die. They were probably produced by two separate branch mint operations near the coast of the central Cilician plain (C. Pedias). The issue represented here by 9 and 10 was first brought to light by Otto Mørkholm; 8 has until now been unpublished. This single obverse die is combined with two strikingly different reverse dies. The a1-p1 combination exhibits stylistic cohesiveness, while a1-p2 seem to be an incongruous match, as if they were brought together from separate mints. The differences between p1 and p2 are significant: the change in the inscription, the monograms and, most importantly, the differing mint symbols all point to separate localities for their production. However, there are similarities of convention. These include the placement of the mint symbol in the outer left field and the magistrate's monogram beneath an exergal line, which suggests that both dies original.



⁶ Otto Mørkholm, "Seleucid Coins from Cilicia, ca. 220–150 B.C.," ANSMN 11 (1964), p. 60, pl. 13, 5, subsequently noted by A. Houghton, "The Seleucid Mint of Mallus and the Cult Figure of Athena Magarsia," Studies Mildenberg (Wetteren, 1984), p. 99, n. 15.

nated within a common currency area and administrative sphere of influence.7

O. Mørkholm has placed the a1-p2 die combination at Soli, based upon the owl symbol, which has been further demonstrated to be the mint symbol of Soli by Houghton.8 As added evidence in favor of Soli for p2, the monogram **A2** on these two drachms appears to incorporate the same elements as \mathbb{A} on the tetradrachms of CSE 528-29, perhaps indicating the same presiding official. While p2 may well be from Soli, it is from a different series than that of the tetradrachms, as appears evident from the change in the royal inscription. CSE 528-29 bear the full series of royal titles for Demetrius II, OEOY OINALEADOY NIKA-TOPOΣ, and a distinctive wreath border on the obverse. These characteristics would seem to make this series contemporaneous with certain first reign issues from Antioch on the Orontes,9 and with Demetrius' earliest tetradrachms of Seleucia on the Calycadnus, where separate series of coins carry, sequentially, the epithets OEOY NIKATOPOS, ΘΕΟΥ ΦΙΛΑΔΕΛΦΟΥ NIKATOPOΣ, and ΦΙΛΑΔΕΛΦΟΥ NIKATOPOΣ (i.e. Owithout OEOY). 10 Since the drachms of die p2, the significant issues of



⁷ See, for example CSE, p. 40, concerning the earlier administrative relationship between Soli and Tarsus.

⁸ Mørkholm (above, n. 6), pp. 60-61; CSE 528-29; A. Houghton, "The Royal Seleucid Mint of Soli," NC, forthcoming.

[•] These are dated 167 and 168 S.E., 146/5 and 145/4 B.C.; see E. T. Newell, "The Seleucid Mint of Antioch," *American Journal of Numismatics* 51 (1917), 206-9 and pp. 60-61, and *CSE* 217-20.

¹⁰ See also, BMCSeleucids, p. 61, 25. O. Mørkholm, "The Monetary System in the Seleucid Empire after 187 B.C.," The Nickle Numismatic Papers (Ontario, 1984), p. 98, suggests that local mint officials may have exercised their own discretion in the use of royal epithets. As a general rule, however, the first reign issues of Demetrius II in the larger silver denominations (tetradrachms and usually the drachms) seem to have maintained a consistent standard in the use of royal titles within their particular mints, if not on a regional or provincial basis. It would seem, also, that major political events directly affecting the royal court brought about blanket programmatic changes in the use of royal epithets in the provinces, as manifested on royal silver issues from Cilicia, northern Mesopotamia (W. Moore, "The Divine Couple of Demetrius II, Nicator, and His Coinage at Nisibis," ANSMN 31 [1986], p. 143), and Babylonia (Seleucia on the Tigris may have begun striking coinage for Demetrius II just after the seizure of Antioch on the Orontes, see below, n. 13).

tetradrachms of Demetrius II at Mallus,¹¹ and his brief drachm issue at Tarsus¹² uniformly lack the epithet OEOY, they are likely to have been struck early in his first reign before the disappearance of this reference to his deification from his coins. Speculatively, the final change in Demetrius' epigraphic program may have been occasioned by the loss of his capital mint at Antioch to Tryphon, acting for the child Antiochus VI.¹³ The sudden burst of mint activity at Mallus for Demetrius II may have been intended to fill some of the currency vacuum thus created by the seizure of his principal mint in mid-144 B.C.

Both p1 and p2 share this same obverse die, yet they display different mint symbols. It seems that two cities were involved in the production of the reverse dies, although one obverse die was used with both. The logical explanation is that a1, which is sharpest with the p1 reverse, was transferred to Soli from another mint at some point prior to the invasion of Cilicia Pedias by Tryphon. The latter's push into the Cilician territories of Demetrius II might have commenced within a few months of his occupation of Antioch, but the exact timing is not certain. The latter's push into the Cilician of the occupation of Antioch, but the exact timing is not certain.

The original mint for a1—with its initial reverse die p1, displaying the long-necked bird symbol (a stork?)—may have been located along a river or an estuary.¹⁶ Soli was located on the coast of Cilicia, between

- ¹¹ Since publication of the catalogue by Houghton (above, n. 6, p. 94), three additional Mallus tetradrachms of Demetrius II have appeared on the market: Geissener Münzhandlung, 3 June 1986, 234 (A4, new P); and Geissener Münzhandlung, 8 Apr. 1987, 281 (new A and P); and one other (new A and P).
- ¹² M. Thompson, "Some Noteworthy Greek Accessions," ANSMN 12 (1966), p. 77, 23
- ¹⁸ See E. Bikerman, *Institutions des Séleucides* (Paris, 1938), p. 221. Demetrius II was driven out of Antioch on the Orontes apparently early in the summer of 144 B.C., judging by the volume of subsequent issues struck there during the same year for Antiochus VI; see Newell (above, n. 9), p. 61.
- ¹⁴ For issues in the name of Antiochus VI at Mallus, see Houghton (above, n. 6), pp. 94-95; Tarsus, J. A. Seeger, "An Unpublished Drachm of Antiochus VI," NC 1972, p. 305.
- ¹⁶ H. Seyrig, *Notes on Syrian Coins*, ANSNNM 119 (1950), p. 21, n. 49, suggests that the Cilician expedition of Tryphon occurred "about 144 B.C."
- ¹⁶ E. Levante has suggested, in a personal communication, that the a1-p1 die combination might have originated at Mallus due to the aquatic nature of the long-necked bird symbol ("a stork or a pelican"), yet the type of a "dynastic" seated Apollo on p1 would seem to exclude this issue from the Mallus mint, which consis-



the mouths of the Lamus and Cydnus rivers and, for an as yet unknown reason, may have had an ancillary mint nearby which produced an issue of drachms contemporaneously with the tetradrachms of *CSE* 528–29. The all die, originally produced along with its pl reverse at such a mint, seems to have subsequently been transferred to Soli, and there mated with p2.

3. Units of the Divine Couple Series of Demetrius II at Nisibis

Obv. Diademed, lightly bearded or beardless, head of Demetrius II r.; fillet or dotted border

Rev. ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ ΝΙΚΑΤΟΡΟΣ

Doubles: bearded figure standing r., wearing tunic over long trailing garment, holding outstretched hand of goddess in long peplos advancing from r.; both crowned with polos and hold cornucopia in l. arm

Units: Nike standing l., holding wreath in extended r.

Series 1, no monograms or letters in rev. field, beardless portrait Double

- 11. ↑ 7.35 Berlin. Moore (above, n. 10), 2. Plate 17, 11. Unit
- 12. † 4.28 Dotted border on obv. CSE 577. Plate 17, 12. Series 2, with monograms or letters in rev. field lightly bearded portrait Double
- 13. † 9.99 H above E in l. field, between figures, Y. Copenhagen. Moore (above, n. 10), 14. Plate 17, 13.

Unit

14. ? ? H above EY in l. field, portrait appears to be beardless.

D. Sestini, Musei Sanclementiani numismata selecta
(Rome, 1808-9), vol. 1, p. 82, pl. 3, 57. Mionnet, Supplément, vol. 8, p. 48, 249. On monogram see G. MacDonald, Hunter 3 (1905), p. 89, 23. Plate 17, 14.

tently issued the "Athena Magarsia" local type from the reign of Demetrius I through that of Antiochus IX (with the exception of a brief drachm issue in the name of Tryphon). See Houghton (above, n. 6), pp. 94-96.



Doubles

- 15. ↑ 6.33 H³ in l. field, between figures, **X**. Private U.S. coll. Plate 18, 15.
- 16. † 5.61 Monograms as 15. Private U.S. coll. Moore (above, n. 10), 29. Plate 18, 16.

Unit

17. † 2.33 X in l. field, H in r. field, portrait may or may not be lightly bearded. Paris. E. Babelon, Les rois de Syrie, d'Arménie et de Commagène (Paris, 1890), 942. Plate 18, 17.

Among the published coins of Demetrius II's first reign at Nisibis (early 140-early 139 B.C.?) there are at least three examples of fractional bronze units (12, 14, and 17) which were produced concurrently with the series of "divine couple" doubles at Nisibis. Having a Nike reverse type, these units appear to have been struck throughout both series 1 and 2 of the doubles and parallel these in portrait style (though beardless?) and form of royal inscription, and display the same moneyer's initials and monograms. There is a precedent for the issuance of bronze coinage in two denominations at Nisibis, one the double of the other, in the quasi-autonomous municipal coins struck there under Antiochus IV. On these the smaller denomination has Nike standing left, holding a wreath, as on these units of Demetrius II.

According to Houghton, 12 is from northern Syria, 19 and its style is very similar to that of 11. The formal rigidity of the reverse figures and the common portrait style suggest the same hand at work in the die engraving for both issues. At the very least, the two issues are from the same "school" of die engravers.

The rendering of the unit 14, a drawing, is not as trustworthy as a photograph, although it does seem to have a portrait style similar to 13, a double, and they are linked by the same moneyer's initials. Whether the drawing approximates a 1:1 ratio with the actual coin size, as well as



¹⁷ Moore (above, n. 10), pp. 125-43. Special thanks are due Michel Amandry for providing copies of the Sestini reference (14) and casts of 17.

¹⁸ BMCSeleucids, p. 42, 86-88.

¹⁹ CSE 577.

the die angle and weight, cannot be determined at this time since the coin could not be located. The placement of the moneyer's initials on the unit suggests that there was an H as the superior of an EY, rather than three officials as previously suggested.²⁰ It is noteworthy that Mionnet describes the Nike as "Victoire crénelée," i.e. with a turreted crown, as though the city itself were celebrating a victory.²¹

While H remains the chief moneyer on the doubles 15 and 16, his subordinate EY has now been replaced by X. On 15 the die engraver tends to employ radical serifs in the inscription and the monogram H, yet the cross strokes at the base of H are clearly divided when viewed under magnification. Coins 16 and 17 both display a distinctly similar portrait style, however both are quite worn and it cannot be determined if 17 has a light beard. They do display the same moneyer's monogram, but in reverse order on the unit, which suggests that X might have been in charge of the unit issue, while still acknowledging his superior H.

4. An Unknown Mint of Antiochus VII in Cilicia

Obv. Diademed head of Antiochus VII r.; fillet border

Rev. ΒΑΣΙΛΕΩΣ ANTIOXOY EYEPFETOY Athena, with spear and shield, holding Nike in outstretched r. hand, seated l. on throne; in l. field, coiled serpent to l.; in exergue, PP; laurel wreath border

Tetradrachms

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18. A1 P1 ↑ 16.61. Page 65.
19. A1 P1 ↑ 16.36. Plate 18, 19.
20. A1 P2 ↑ 16.33. Plate 18, 20.
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²⁰ Moore (above, n. 10), p. 130.

The words of Justin, in this regard, are particularly poignant: "The people of the east beheld his approach [Demetrius II] with pleasure, both on account of the cruelty of Arsacides, king of the Parthians, and because having been accustomed to the old government of the Macedonians, they viewed the pride of the new race with indignation. Being assisted, accordingly, by auxiliary troops from the Persians, Elymaeans, and Bactrians, he routed the Persians [sic] in several pitched battles." Justin, Cornelius Nepos, and Eutropius, transl. J. S. Watson (London, 1890), 36.1.





18

These three coins appeared in a recent hellenistic hoard which included tetradrachms of Byzantium (Lysimachus type), Klazomenae, Mytilene, and royal Seleucid issues from the period of Alexander I Balas through the second reign of Demetrius II, the burial date of which appears to have been ca. 127 or 126 B.C.22 Where they were struck is not known, but a number of clues narrow the likely location. For one matter, the Seleucid component of the hoard consisted principally of Attic weight tetradrachms from northern Syria and Cilicia, indicating that the new coins may also have originated in the same general area. For another, the reverse type of a seated Athena Nikephoros appears only twice on Seleucid issues, both from Cilicia—first on a bronze issue of Antiochus IV struck at an unidentified mint;23 and again on a tetradrachm of Antiochus VII of Soli, Plate 18, 21.24 Comparison of the new tetradrachms with Antiochus' Solian issue indicates clear parallels between the two in a number of respects, including the details of Athena's helmet, with its high crest and frontlet at the brow, and in the goddess's dress, shield, and the form of her throne. The convention of placing the monograms in the exergue and the symbol in the inner left field are also the same in each case. Although the new issue is different from its Solian counterpart in its wreath border, its style, and the symbol (a coiled serpent instead of an owl), it is close enough to suggest that its mint was located in the same general area as Soli in Cilicia.



²² The details of the find are to be published by Martin Price in a forthcoming issue of *Coin Hoards*.

²³ See CSE 549-50 and associated commentary.

²⁴ G. Le Rider, "Monnaies grecques récemment acquises par le Cabinet de Paris," RN 1969, p. 13, 7.

The monograms of the new issue support the suggestion: A and A are not common marks on Seleucid issues of the period and, in fact, appear only once in combination—also during the reign of Antiochus VII, on a tetradrachm with the reverse type of a standing Athena, struck at the Cilician provincial capital of Tarsus, Plate 18, 22.25 While the differences between the new tetradrachms of Antiochus and his known Tarsian issues make it extremely unlikely that the former were also struck at this city, the evidence seems very strong that they were produced at a nearby mint which shared with Tarsus the same officiating magistrates. The exercise by mint officials of administrative authority over more than one mint was not widespread in the Seleucid period; but it seems to have been a relatively common practice in Cilicia, where at an earlier time it occurred between Tarsus and an as yet unidentified mint operating during the reigns of Seleucus II and Antiochus III, and between Tarsus and Soli from the reigns of Antiochus III to Demetrius I.26

The evidence, in sum, indicates that the new tetradrachm issue of Antiochus VII was struck at a city, perhaps near Soli, whose mint was influenced by and seems to have operated under the influence of the province capital at Tarsus—one likely, in any event, to have been in the western part of Cilicia Pedias. But which? Local coins with the name of their issuing city and a coiled serpent as a type or symbol would resolve the question, but none have appeared which might do so. In the end, the serpent is the key. That it is a city symbol and not an intended attribute of Athena is indicated by the Seleucid silver of Cilicia struck toward the end of the second century B.C. As seems clear from a review of the known material, both symbols and monograms were invariably placed on silver coins unless the reverse type was itself a sufficiently unequivocal indicator of origin so that the symbol could be omitted as



New York; ANS, 16.45. For related issues of Antochus VII of Tarsus with the monogram PA, see H. Seyrig, *Trésors du Levant, anciens et nouveaux*, p. 100, trésor 30, 328–30; for Tarsian coins of Demetrius II, second reign, with PP, see A. Houghton, "The Second Reign of Demetrius II of Syria at Tarsus," *ANSMN* 24 (1979), pp. 111–16.

²⁶ CSE, p. 42 ("Cilicia: Soli"); CSE, p. 44 ("Cilicia: Uncertain Mint"), and n. 1.

unnecessary.²⁷ Whether in the case of Soli, for example, or of the new tetradrachm issue of Antiochus VII, the seated Athena reverse does not meet this test; and the coiled serpent, like Soli's owl, must therefore represent a city, still unknown.

5. SELEUCUS VI AT ELAEUSA SEBASTE

Obv. Diademed head of Seleucus VI r.; fillet border

Rev. ΒΑΣΙΛΕΩΣ ΣΕΛΕΥΚΟΥ ΕΠΙΦΑΝΟΥΣ NIKATOPOΣ Goddess (Aphrodite?) standing left., resting l. hand on tiller; in l. field, aplustre; monograms, if any, obliterated; laurel wreath border.

Tetradrachm

23. ↑ 14.83 ANS. Plate 18, 23.

The attribution of certain late Seleucid tetradrachms which have, on their reverse, a standing Athena and a small plant or leaf symbol in the left field, has been the subject of scholarly discussion since the beginning of the century, when F. Imhoof-Blumer first attributed them to the Cilician city of Seleucia on the Calycadnus.²⁸ Imhoof-Blumer's attribution stood for more than forty years, until A. R. Bellinger reassigned such issues of Antiochus VIII and Seleucus VI to the mint of Elaeusa Sebaste on the basis of their monogram associations with coins struck at the latter mint.²⁹ In subsequent discussion of individual coins of the series in Brussels and Copenhagen, Naster and Mørkholm supported Imhoof-Blumer's attribution; Jenkins, however, favored Elaeusa as their origin.³⁰ Most recently Houghton has affirmed the



²⁷ A. Houghton, "The Royal Seleucid Mint of Seleucia on the Calycadnus," Kraay-Mørkholm Essays, forthcoming.

²⁸ F. Imhoof-Blumer, "Zur syrischen Münzkunde," NZ 1901, p. 4, and Kleinasiatische Münzen (Vienna, 1902), vol. 2, p. 482, 7.

²⁹ A. R. Bellinger, "A Seleucid Mint at Elaeusa Sebaste," ANSMN 3 (1948), p. 29.

³⁰ P. Naster, "Les Monnaies séleucides attribuées à l'atelier d'Elaeusa Sebaste," RBN 1959, pp. 13-16; O. Mørkholm, "Two Seleucid Coin Notes," NC 1957, p. 10; G. K. Jenkins, "Recent Acquisitions of Greek Coins by the British Museum," NC 1959, pp. 44-45, 26.

attribution of the entire series of Seleucid issues with the same plant symbol to Seleucia, suggesting at the same time that the symbol of Elaeusa was the aplustre, which appears on the latter city's autonomous tetradrachms.³¹ By implication an aplustre should appear on any Seleucid issue struck at Elaeusa, although at the time of Houghton's study no Seleucid coins had appeared which could be attributed to this mint. A tetradrachm which has been in the trays of the American Numismatic Society for some years, however, now confirms that Elaeusa did, in fact, issue money for Seleucus VI.

The aplustre symbol and the goddess with a tiller, both of which appear on the four known examples of Elaeusa's autonomous issues, ³² are specific to this city's coinage in the same manner as the plant and standing Athena are to that of Seleucia on the Calycadnus. ³³ The tiller-holding goddess appears at Elaeusa only on its silver tetradrachms, although a bronze issue of the late hellenistic (first century B.C.) period shows on its reverse a similar goddess holding an aplustre in her outstretched right hand. ³⁴ Elsewhere, one finds a tiller-holding Tychai—at Tripolis under Antiochus IX and as an independent city; at Antioch, on the earliest issue of Antiochus VIII with a child's portrait, apparently struck under Cleopatra Thea in 128 B.C.; also at Antioch, on bronzes and drachms of Antiochus IX and X; and on a late hellenistic bronze issue of Aegeae—but a goddess with tiller is otherwise unknown as a coin type. ³⁵

The coin is not dated. Its portrait is an academic copy of the obverse of one of Seleucus' Antiochene tetradrachms, Plate 18, 24, and this brief issue is therefore likely to have been struck between late 95 and the



³¹ Houghton (above, n. 27).

³² See S. Bendall and A. Houghton, "A Hoard of Aegean Tetradrachms and the Autonomous Tetradrachms of Elaeusa Sebaste," below, pp. 71-89.

³³ Houghton (above n. 27).

³⁴ SNGLevante 839.

Tripolis, Antiochus IX, CSE 693; Tripolis, city issues, H. Seyrig, "Sur les ères de quelques villes de Syrie," Antiquités Syriennes 4 (1953), pp. 108-9; Antioch, Antiochus VIII, first reign: CSE 689-92, assigned to Tripolis, but for the reattribution, A. Houghton and G. Le Rider, "Un Premier Règne d'Antiochos VIII Epiphane à Antioche en 128," BCH 112 (1988), pp. 401-11; Antioch, Antiochus IX and X, CSE 356-58 and CSE 383-84.

middle of 94 B.C.³⁶ Except for type and symbol, there is nothing to link it directly with Elaeusa's autonomous tetradrachms. The latter are of sufficiently different style in any case as to suggest that they were produced by die engravers working some years after Seleucus' rule at Elaeusa had ended.

³⁶ On the likely dates of Seleucus's seizure of Antioch, see Houghton (above n. 27); *CSE* 365. It is to be noted that unlike Seleucus' early issues of Antioch, his portrait on the tetradrachms of both Elaeusa Sebaste and Seleucia on the Calycadnus has no horn.



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A HOARD OF AEGEAN TETRADRACHMS AND THE AUTONOMOUS TETRADRACHMS OF ELAEUSA SEBASTE

(PLATE 19)

ARTHUR HOUGHTON AND SIMON BENDALL

The last volume of this periodical contained a posthumous note by Otto Mørkholm which concerned the chronology of the autonomous tetradrachms of Aegeae in Cilicia. Against arguments that had been put forward earlier by H. Bloesch that Aegeae's tetradrachms should be dated according to a city era beginning ca. 105/4 B.C., Mørkholm proposed instead that they should be assigned to the city's Caesarian era, which started in 47 B.C., some two years after it had been begun at Antioch.

- ¹ O. Mørkholm, "The Date of the Autonomous Tetradrachms of Aegeae in Cilicia," ANSMN 32 (1987), pp. 57-60 (hereafter, Mørkholm, "Autonomous Tetradrachms"). Our thanks go to Prof. Bloesch for his helpful commentary throughout the preparation of this article. Others have provided important information or suggestions, for which we here express our gratitude. They include in particular Michel Amandry, Paris; H. R. Baldas, Munich; Andrew Burnett, London; D. Klose, Munich; Georges Le Rider, Paris; H.-D. Schultz, Berlin; and Ch. Zindel, Winterthur.
- ² H. Bloesch, "Tetradrachms of Aegeae (Cilicia)," Essays Thompson, pp. 1-7 (hereafter, Bloesch, "Tetradrachms"), and "Hellenistic Coins of Aegeae (Cilicia)," ANSMN 27 (1982), pp. 53-96 (hereafter, Bloesch, "Aegeae").
- ³ F. Imhoof-Blumer, Kleinasiatische Münzen (Vienna, 1902), vol. 2, p. 424, 2; Bloesch, "Aegeae," p. 3. The first year of the city's Caesarian era can be precisely determined from the Aegean coins of Macrinus and Diadumenian (April 217–June 218 A.D.), dated in years 263 and 264: see SNGLevante 1744–54. On the beginning of the Caesa-



Mørkholm's redating of the Aegean tetradrachms rests on two principal considerations. One is the legend of the coins, AIFEAI Ω N, which Mørkholm found impossibly inconsistent with the full AIΓEAIΩN THΣ IEPAX KAI AYTONOMOY which appears on the city's bronze issues struck during the first years of its autonomy.4 The other concerned the weights of the four known tetradrachms of Aegeae, which fall within the range of the Ptolemaic weight standard whose use at the city during the first decades of the second century B.C. would have been an inexplicable anomaly, but which would have been fully consistent with the period after 44/3 B.C. As Mørkholm noted in his discussion of the metrology of the coins, the number of Aegean tetradrachms known at the time of his writing was too small to be statistically definitive; but in late 1986 a hoard of eight new tetradrachms, seven of which were struck at Aegeae, appeared on the London market, providing important information on the series and lending substantial support to Mørkholm's later chronology.

TETRADRACHMS OF AEGEAE IN CILICIA

Obv. Head of city r., turreted and veiled; fillet border

Rev. AIΓEAIΩN Athena with spear and shield to l., holding Nike in r. hand; to l., ΔI and club; to lower r., Δ; in exergue, IC (year 16) or IZ (year 17); wreath border

rian era at Antioch in 49 B.C., see H. Seyrig, "Sur les ères de quelques villes de Syrie," Syria 27 (1950), pp. 5-15 (hereafter, Seyrig, "Ères"), at Laodicea in 48 B.C., pp. 26-32, and O. Mørkholm, "The Autonomous Tetradrachms of Laodicea ad Mare," ANSMN 28 (1983), p. 93 and n. 11 (hereafter, Mørkholm, "Laodicea"). For a recent summary of the coinages of the Syrian cities and their eras in the first century B.C., with current references, see H. R. Baldus, "Syria," The Coinage of the Roman World in the Late Republic, BAR International Series 326 (Oxford, 1987), pp. 121-51 (hereafter, Baldus, "Syria.")

4 Mørkholm, "Autonomous Tetradrachms," pp. 57-58; the problem was clearly seen by Bloesch, "Tetradrachms," p. 5. Seyrig, "Eres," p. 7, has pointed out that the prestige of a city made it important to publicize its autonomy when it was obtained, but not necessarily later. As G. Le Rider has noted in a personal communication, the need to declare this privilege appears to have dwindled over time until, toward the end of the first century B.C., the reference to a city's status was dropped entirely from its coinage. The absence of such a statement on late first century B.C. city coins, in short, did not necessarily mean that the city was not independent.



AEGEAN TETRADRACHMS, TETRADRACHMS OF ELAEUSA SEBASTE 73

Year 16: Plate 19, 1-4. Year 17: Plate 19, 5-7.

Year	Dies		Monograms	Weight	Reference
4	A1	P16	≙ E	14.24	Winterthur. Bloesch, "Ae-
					geae," 109; Bloesch," Tetra-
					drachms," 1.
13	A2	P2	ΔΙ Δ	13.86	Berlin. Bloesch, "Aegeae,"
					110; Bloesch, "Tetra-
					drachms," 2.
16	A2	P3	ΔΙ Δ	14.08	Hoard, 1.
	A2	P3	ΔΙ Δ	14.19	Hoard, 2.
	A2	P4	ΔΙ Δ	14.58	E. Waddell FPL 27, 1987,
					55. Hoard, 3.
	A3	P5	ΔΙ Δ	14.16	SNGLevante 1655; Bloesch,
					"Aegeae," 111; Bloesch,
					"Tetradrachms," 3.
	A3	P5	ΔΙ Δ	14.38	Tkalec and Rauch, 16 Nov.
					1987, 137. Hoard, 4.
17	A3	P6	ΔΙ Δ	14.44	Hoard, 5.
	A3	P7	ΔΙ Δ	14.24	New York, ANS. Bloesch,
					"Aegeae," 112; Bloesch,
					"Tetradrachms," 4.
	A3	P8	ΔΙ Δ	14.28	Hoard, 6.
	A3	P8	ΔΙ Δ	14.50	Hoard, 7.
18	A3	P9	ΔΙ Δ	14.00	SNGLevante 1656; Lanz 34,
					25 Nov. 1985, 273.

The number of Aegean tetradrachms now known makes it impossible for their weights to be anomalous. As the catalogue shows, these range between 13.86 and 14.58 g, but cluster around a mean of 14.25 g, exactly that of the Ptolemaic standard which had been employed from the second century onward by virtually every city which struck coinage in Phoenicia.



⁵ Mørkholm, "Autonomous Tetradrachms," p. 58.

[•] The die orientation of the year 4 coin is $\uparrow \mathbb{R}$; all the others are $\uparrow \uparrow$.

Mørkholm has shown the likelihood that the Aegean coins were issued after ca 44/3 B.C.; but to understand the broader context of their production, it is helpful to review the shifting pattern of currency systems in use during this period (see Figures 1 and 2).

Currency Systems

Three currency systems were in effect during the first century B.C.7 At Antioch, the Attic standard prevailed. Lightened to approximately 16.25–16.49 g about 105 B.C., it was permitted to fall further early in the first century until, by the time of Philip I (89–84/3 B.C.) and Tigranes II (83–69 B.C.), the majority of Antiochene tetradrachms ranged between ca. 15.50 and 15.75 g. The decline continued after Tigranes into the reign of Antiochus XIII and the city's early Roman period, finally stabilizing under Antony and Cleopatra (36–31 B.C.) slightly below 15.00 g, where it remained into the Imperial era.8 A reduced Attic standard, lightened by about 0.20 g from that concurrently employed at Antioch, was in effect at the Cilician cities of Seleucia on the Calycadnus and perhaps Tarsus during the reign of

- ⁷ O. Mørkholm, "The Attic Coin Standard in the Levant during the Hellenistic Period," Numismatica antiqua Paulo Naster Oblata (Louvain, 1982), pp. 142–44 (hereafter, Mørkholm, "Attic Coin Standard"), summarizes the production of tetradrachms at Antioch to the period of Tigranes. For metrological tables on the coins of Antioch through Philip I and an important discussion on the theoretical weight of coins produced at that city, see E. Schlösser, "Gewichte der attischen Tetradrachmen der Seleukiden aus der Münzstatte Antiocheia am Orontes," SM 36 (1986), pp. 61–66. Schlösser's increments for the weights of Antiochene coins differ slightly from Mørkholm's, but his conclusions are essentially the same.
- 8 The median weight of the coins is approximately 0.10 g lower than given by Mørkholm, "Attic Coin Standard," p. 146. Weights of many pseudo-Philip tetradrachms of Antioch are recorded by E. T. Newell, "The Pre-Imperial Coinage of Roman Antioch," NC 1919, pp. 69–113 (hereafter, Newell, "Pre-Imperial Coinage"). Additional data on the coins of Antiochus XIII and Aulus Gabinius has been provided by Prof. Bloesch. The effect of the stabilization of the Attic standard at Antioch can be seen in the composition of the intact hoard from Båb, Syria, recorded by H. Seyrig, Trésors du Levant, anciens et nouveaux, Trésors monétaires séleucides 2 (Paris, 1973), pp. 109–10 (trésor 39) (hereafter, Seyrig, Trésors), which contained tetradrachms from the reign of Philip I through that of Augustus. On the attribution to Antioch of the tetradrachms of Antony and Cleopatra, see below, pp. 82–83 and n. 22.



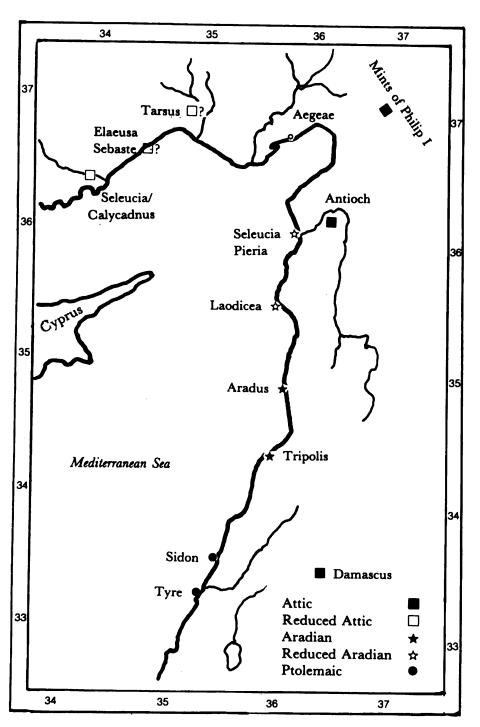


FIG. 1: TETRADRACHM STANDARDS, 96-83 B.C.

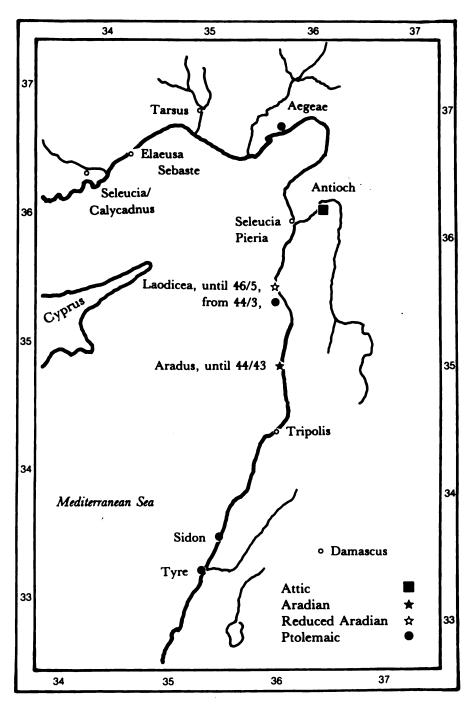


Fig. 2: Tetradrachm Standards, 47/6-17/6 B.C.

Seleucus VI (at Seleucia, ca. 98-94 B.C.) and for the next decade at Elaeusa Sebaste (below).9

A second tetradrachm standard of about 15.30 g was employed at Aradus from 138/7 B.C. until 44/3 B.C. and at Tripolis during the first three decades of the century. 10 Both Seleucia Pieria and Laodicea struck Aradian weight tetradrachms as well, but these were reduced from the Aradian mean by ca. 0.20 g to create what was, effectively, a reduced Aradian standard.

Seleucia Pieria's production of silver ended in 84/3 B.C., leaving at the mid-century only Aradus and Laodicea striking tetradrachms in the northern coastal area. When Aradus ceased production in 44/3 B.C. Laodicea, now renamed Julia Laodicea and using the Caesarian era to date its issues, reorganized its own coinage and adopted for its tetradrachms the third system, the Ptolemaic, whose standard had been set at the end of the fourth century B.C. under Ptolemy I at 14.25 g.¹¹

Against the landscape of currency systems in use during the first century B.C., the tetradrachms of Aegeae had to have been struck after the Attic, reduced Attic, and Aradian weight issues of other communities were no longer in extensive use in Cilicia and the northern Syrian coast and had been, or were being, replaced by coins struck on the Ptolemaic standard (Figure 2). Had they been issued in the first decades of the second century, they would have been incompatible with the currencies in use in the area of the city's most direct and critical



⁹ The term "reduced standard" is here intended to apply to a weight standard lighter than but employed at the same time as the regular standard from which it evolved. Reduced Attic, for example, refers to the standard of a province or district mint intentionally reduced from the standard in concurrent use at Antioch. Mørkholm's use of the term "reduced Attic" for late hellenistic coinages of Antioch ("Laodicea," p. 101) permits no distinction between, on one hand, Antiochene silver whose weight had been in more or less continuous decline from the early second century B.C. until the last half of the first century B.C. and, on the other, the standard of at least one outlying group of mints (Seleucia on the Calycadnus, Elaeusa Sebaste, and perhaps Tarsus) which had been reduced from even the lightened standard of Antioch in use at the same time, ca. 98–83 B.C.

¹⁰ Mørkholm, "Laodicea," pp. 89–107, esp. pp. 94–95, and "Attic Coin Standard," pp. 144–45 and p. 149, table 5.

¹¹ Mørkholm, "Autonomous Tetradrachms," p. 58, and "Laodicea," pp. 94-95; Seyrig, "Ères," pp. 26-27.

commercial access and usable only in southern Phoenicia and Egypt. Such a hypothesis could be sustained only if Aegeae had deliberately cut itself off from its traditional trading partners and had determined to deal solely with communities far to its south; but this is unreasonable on the face of both the numismatic and historical records.

On the basis of the evidence, then, Aegeae's tetradrachms were struck late in the first century B.C., and their dates must accord with the city's Caesarian era, as Mørkholm has shown. The terminus post quem for the new hoard must then be the date of its final issue, of year 17, or 30/29 B.C. The clustering of the hoard's coins in a brief, two-year span suggests that it was buried soon after the date of the last element of the find, about 29 or 28 B.C.

Dies, Production Rate, Circulation and Context

It is unknown how many dies may have been in use at Aegeae before year 13; only one is known, but two or more are possible. If, as the coins indicate, only two dies were employed between years 13 and 18,12 the mint's tetradrachm production would then seem to have been quite limited.13 This is also suggested by the relatively small number of recovered coins, none of which have been recorded in hoards before the current find.

The absence of any other hoards of Aegean tetradrachms and the lack of a complete sequence of issues is frustrating to a meaningful analysis of their circulation and their role within the broader context of coinage production and use in the second half of the first century B.C. A tabular summary of what is currently known of tetradrachm production in the area from 60 B.C. to 15 B.C. illustrates the point.

- ¹² Although most of the known coins were discovered in a single hoard, the likelihood of finding another die for years 13 through 17 is low, using the statistical probability methods developed by Marriott and Raven and given precision by W. McGovern, "Missing Die Probabilities, Expected Die Production and the Index Figure," ANSMN 25 (1980), pp. 209–23. It can also be inferred from the table of Aegean issues.
- ¹³ O. Mørkholm, "The Life of Obverse Dies in the Hellenistic Period," Studies in Numismatic Method Presented to Philip Grierson (Cambridge, 1983), pp. 11-21. Mørkholm, "Laodicea," p. 97, records a nine year life span for an obverse die.



AEGEAN TETRADRACHMS, TETRADRACHMS OF ELAEUSA SEBASTE 79

TETRADRACHMS OF CILICIA, NORTHERN SYRIA, AND PHOENICIA, 60–15 B.C.

DATE B.C.		WEIGHT STANDARD								
	Ar	ADIAN	Ртол	EMAIC	ATTIC					
	Aradus ^a	Laodicea ^b	Laodicea ^b	A EGEAE ^c	Antioch ^d					
60/59	×									
59/8		19, 20, 21								
58/7		21, 22								
57/6°		19, 22			†					
56/5		22			Æ					
55/4		22			1					
54/3					Ķ					
53/2					↑ E					
52/1		22, 23, 24			ē					
51/0		22, 25			↓					
50/49										
49/8		25								
48/7		26, 27, 28								
47/6		26			Г					
46/5		26			Δ					
45/4					E					
44/3	×		26	1	ς					
43/2 ^f										

^a The last tetradrachm issues of Aradus are mentioned by Mørkholm, "Laodicea," p. 101, n. 26.



b The numbers refer to dies as given by Mørkholm, "Laodicea."

^c The numbers refer to obverse dies cited in this article.

d For the pre-Imperial coinage of Antioch, see A. R. Bellinger, "Coins from Antioch in Syria," ANSMN 5 (1951), pp. 55-57 (tetradrachms of Aulus Gabinius), and "Crassus and Cassius at Antioch," NC 1944, pp. 58-61; and Seyrig, "Ères," pp. 5-15. These have been confirmed or supplemented by information from the trays of the ANS, British Museum, Cabinet des Médailles, Staatliche Museen zu Berlin, Staatliches Münzsammlung Munich, and the Stadtbibliothek Winterthur; a review of the Antioch and Dura excavation reports; standard hoard inventories; and with particular assistance from Andrew Burnett (dated tetradrachms struck from years 3 through 33).

^{*} The specific years of issue of the undated coins of Aulus Gabinius and Cassius have not been determined.

The specific year(s) of issue of the tetradrachms of Antony and Cleopatra have not been determined.

80	ARTHUR HOUGHTON A	and Simon E	BENDALL	
42/1				Н
41/0				0
40/39		26		į
39/8				
38/7				ВІ
37/6				
36/5				
35/4			2	
34/3				
33/2				
32/1			2, 3	
31/0		29	3	01
30/29		30	3	K
29/8				AK
28/7				BK
27/6				ΠK
26/5				ΚΔ
25/4				KE
24/3				SK
23/2				IK
22/1				HK
21/0				ΘK
20/19		31		٨
19/8		32		AA
18/7		33		BΛ
17/6		34		ΓΛ
16/5				

As Mørkholm has noted, coin production at Aradus was evidently very sporadic after 60/59 B.C.: only a single tetradrachm of 44/3 B.C. has been recorded.14 Laodicea's production at the beginning of the decade was moderate but dwindling, only ten dies being put into use during the twenty-year period from 59/8 to 40/39 B.C. In 57 B.C., Antioch began to issue tetradrachms of the type of Philip I Philadelphus, first under Pompey's legate, Aulus Gabinius (governor of Syria and proconsul, 57-55 B.C.), then a few years later under Crassus (quaestor, 53 B.C.) and C. Cassius Longinus (pro-quaestor, 53-ca.



¹⁴ Mørkholm, "Laodicea," pp. 100-101.

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51 B.C.).¹⁵ Production of these first pseudo-Philips seems to have been moderate,¹⁶ and it is questionable how much they may have been intended to contribute to the silver currency in general circulation in the north, which was then principally composed of Philip's lifetime issues.¹⁷

A hiatus in Antioch's coin production seems to have occurred for three or four years thereafter, during which only Laodicea was issuing money in any quantity. Coinage at Antioch was only recommenced after Caesar's visit to the city in the summer of 47 B.C.¹⁸ Almost immediately after his arrival Antioch he struck a bronze issue dated in the second year of the Caesarian era of that city (47/6 B.C.) which proclaimed its autonomy, and this was followed the next year by a reissuance of the pseudo-Philip tetradrachms, also bearing the dates of the new era. The revived pseudo-Philips were evidently produced only intermittently from years 3 through 12 (we know of no coins of years 7 and 11) and not in great quantity. After 38/7 their production appears to have ceased abruptly; it was taken up again, continuously, after



¹⁵ Bellinger, "Coins from Antioch in Syria," ANSMN 5 (1951), pp. 55-57, and "Crassus and Cassius at Antioch," NC 1944, pp. 58-61; however, see the chronology of Baldus, "Syria," p. 127.

¹⁶ Judging from the four coins recorded by Newell, "Pre-Imperial Coinage," p. 87, 1; two recorded by Bellinger (above, n. 15, "Coins from Antioch"), p. 55; and 25 from a fragmentary hoard recorded by Seyrig, *Trésors*, p. 106, trésor 35. A die study of these coins and the subsequent issues of Republican and early Imperial Antioch which will clarify the sequence and extent of their production is to be published by Andrew Burnett.

¹⁷ Bellinger (above, n. 15, "Crassus"), p. 61, felt that these coins were intended to "pay the troops." Newell, "Pre-Imperial Coinage," pp. 80-81, believed that the entire production of pseudo-Philips was meant to replace worn-out coins in circulation. The dated (Caesarian era) tetradrachms of Antioch are frequently found in hoards with lifetime Philips and other coins (see, for example, Seyrig, *Trésors*, pp. 109-10, trésor 39) and were almost certainly meant for circulation in a broad area. The production and circulation of the earlier coins of Aulus Gabinius, Crassus and Cassius, however, appear to have been somewhat more restricted: they therefore may have been struck principally for the purpose of military pay, as Bellinger suggests. The political implications of this coinage are briefly reviewed by Baldus, "Syria," pp. 127-28.

¹⁸ Seyrig, "Ères," p. 9. Caes. *BAlex.*, 65–66, reports his visit to Syria and Cilicia in 47 B.C.

Octavian's victory at Actium, which established a long period of political stability in the Roman world and, for Antioch in particular, ushered in a new age of prosperity.¹⁹

Except for Antioch, only Laodicea and Aegeae were issuing silver coinage in the Syrian north and Cilicia from ca. 45 B.C. onward. Laodicea's production was both light and sporadic; as far as can be determined from the coins, Aegeae's was as well. The appearance of Aegeae's earliest known tetradrachm coincides in a general manner with a number of major developments of a financial and political nature in the area—the dwindling and disappearance of Aradus's tetradrachm output, the shift at Laodicea from the issuance of light Aradian to Ptolemaic weight standard tetradrachms, and the final year of Caesar's reign before his assassination brought Crassus back to Syria—but whether or not it was related to them in any way is impossible to tell. This first Aegean issue of Caesarian year 4 may have been immediately preceded or succeeded by other city tetradrachms, but this, too, is unknown, and it is hazardous to draw any particular inference from the fact that the next recorded issue appears nine years later in year 13 (34/3 B.C.).

The apparent resumption of coinage at Aegeae concides in a general manner with a gap in the known production of Laodicea's autonomous tetradrachms from 39/8 B.C. through 32/1 B.C., and of Antioch's pseudo-Philips from 37/6 B.C. through 32/1 B.C. If there was in fact a cessation of Laodicean coins, it cannot be explained with our current knowledge and it is possible that the interval will be filled by new finds. The break in Antioch's production of pseudo-Philip tetradrachms, however, is probable. It began at the time of the visit in 36 B.C. of Antony and Cleopatra to Antioch, where they wintered, and ended with the year of the battle of Actium. Arguments have occasionally been made against the attribution to Antioch of the well known



¹⁰ In the Table above, coins of years 23, 25, and 30-33 are added to Seyrig's chart, "Eres," p. 13.

²⁰ Mørkholm, "Laodicea," p. 96; the three hoards with Laodicean tetradrachms mentioned on pp. 97-98 contained no coins of this city struck after 44/3 B.C.

and very numerous tetradrachms of Antony and Cleopatra,²¹ and while this is not the place for a detailed reexamination of the mint or years of issuance of these coins, important hoard and metrological evidence continues to point to their northern Syrian origin.²² On balance, it seems certain that they were struck at Antioch during the six-year production interval of pseudo-Philips, between 37/6 and 32/1 B.C.

The extent and function of Aegeae's tetradrachms will not be understood until many more coins are recorded and analyzed. A particular question is whether the apparent resumption of these issues is more than coincidental with Antony's and Cleopatra's period of rule at Antioch. It may not be; but it may be of more than passing relevance that Plutarch (Ant. 36, 2) reports that Cleopatra received among her first donations in 36 B.C. "much of Cilicia," as well as Phoenicia, Coele-Syria, and Cyprus. If Cleopatra's Cilician territories included Aegeae, which was then the only city in that province with an active mint, it could suggest a reason for the resumption of tetradrachm production there, if not its beginning. It does not, however, suggest a reason for the continuation of these coins after her death, for the clustering of Aegeae's late issues (years 16, 17, and 18), or for their close concurrence with the resumption of Laodicea's tetradrachms and of Antioch's pseudo-Philips in 31/30 B.C.



²¹ T. V. Buttrey, "Thea Neotera on Coins of Antony and Cleopatra," ANSMN 6 (1954), pp. 95-109.

As Mørkholm, "Attic Coin Standard," p. 146, notes, the tetradrachms of Antony and Cleopatra were struck on the Attic standard, a point which explains their appearance only in northern Syrian contexts (the average of the 26 coins recorded by I. Svoronos, Ta Nomismala lou Kralous lon Ptolemaion [Athens, 1904–8], vol. 2, p. 316, 1897, is 14.76 g, using an exclusion limit of 5%). Seyrig, Trésors, pp. 109–10, records six coins of Antony and Cleopatra in a hoard of exclusively Antiochene tetradrachms and concludes that they, too, were struck at Antioch. Baldus, "Syria," p. 128, also assigns these coins to Antioch, observing that they would fit perfectly into the gap in the production of Antiochene pseudo-Philips between 37/6 and 32/1 B.C. The exact date of this issue remains uncertain: the very large number of recovered coins, struck from many dies, suggests that they were produced over several years as a regular issue of Antioch replacing the standard pseudo-Philips and not, as some scholars have held, as a special coinage limited to a few months duration.

The Dates of Aegeae's Autonomy

There is no documentary evidence indicating when Aegeae may have attained autonomous status, as Prof. Bloesch has noted,²³ and the historical record is clear that this could not have occurred after Tigranes' seizure of Cilicia. The redating of Aegeae's tetradrachms to the late first century B.C. leaves open the question of when autonomy may have been granted. The city's bronzes are of little help in clarifying the matter; but the last royal Seleucid issues struck in Cilicia may suggest a terminus post quem for the event.

City	Last Seleucid Issue	Subsequent Coins/Legends					
Seleucia/	Seleucus VI ⁹⁴	Local bronzes:					
Calycadnus		ΣΕΛΕΥΚΕΩΝ, ΣΕΛΕΥΚΕΩΝ ΤΩΝ					
		ΠΡΟΣ ΤΩΙ ΚΑΛΥΚΑΔΔΝΩΙ, etc. ²⁵					
Elaeusa	Seleucus VI ²⁶	Autonomous tetradrachms:					
Sebaste		ΕΛΑΙΟΥΣΙΏΝ ΤΗΣ ΙΕΡΑΣ ΚΑΙ ΑΥΤΟ-					
		NOMOY; local bronzes: EAAIOY-					
		ΣΙΩΝ ²⁷					
Tarsus	Seleucus VI;28 perhaps	Local bronzes: ΤΑΡΣΕΩΝ ²⁰					
	Ant. XI and Philip I20						

Autonomy may not have been granted to Seleucia on the Calycadnus at all; it is not clear from the coins. It was certainly not conferred on

- Bloesch, "Aegeae," pp. 54 and 77.
- A. Houghton, "The Royal Seleucid Mint of Seleucia on the Calycadnus," Kraay-Merkholm Essays forthcoming (hereafter, Houghton, "Seleucia").
 - ²⁶ SNGLevante 680-718.
- See A. Houghton and W. Moore, "Five Seleucid Notes," above, pp. 67-69, for another type.
 - 27 SNGLevante 823-39.
- ²⁸ G. Le Rider, "Monnaies grecques récemment acquises par le Cabinet de Paris," RN 1969, p. 15, 8.
- ²⁹ A. Houghton, "The Double Portrait Coins of Antiochus XI and Philip I: A Seleucid Mint at Beroea?" *SNR* 66 (1987), pp. 79–84 (hereafter, Houghton, "Beroea?").
- ³⁰ SNGLevante 939-87. See also D. H. Cox, "The Coins," Excavations at Gōzlū Kule, Tarsus, vol. 1, The Hellenistic and Roman Periods, ed. H. Goldman (Princeton, 1950), p. 55, and table, p. 58, for a brief discussion and proposed list of Tarsian bronzes which might be assigned to the years following the end of Seleucid rule. Some of the issues Cox suggests belong to this period may have been struck under Antiochus VIII or IX.



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Elaeusa until at least the reign of Seleucus VI. Indeed, Seleucus himself and his immediate Seleucid successors appears to have been resistant to any change in the political status of the province as long as they controlled it. By extension, Aegeae, too, would have been denied autonomous status until the end of Seleucus's reign, assuming that the city was under the control of the Seleucids at the time. There is no strong reason to believe that the situation was otherwise. Whatever the course of their internecine struggles the later Seleucids who are known to have struck coins in Cilicia, including Antiochus VIII, Antiochus IX, and Seleucus VI, seem to have administered the territory from the Calycadnus River to the Orontes Valley, excepting Seleucia Pieria³¹ but including the area of Aegeae itself; Philip I may have done so as well.³² If such was the case in fact, it is unlikely that Aegean autonomy began before 94 B.C. at the earliest, and perhaps not until a decade later.

THE AUTONOMOUS TETRADRACHMS OF ELAEUSA SEBASTE

The tetradrachm of Elaeusa Sebaste in the current hoard (Plate 19, 11) brings the number of known autonomous silver coins of this mint to four. The evidence suggests that it was struck during Elaeusa's brief period of autonomy some sixty years before the Aegean coins in the hoard. Its condition is excellent and it seems to have been little used; there is nothing to indicate that it is an intrusion, however. Its weight is low, but it fits well within the small series of Elaeusan tetradrachms whose metrology conforms to a reduced Attic standard influenced, perhaps, by the late Seleucid coinage of Seleucia on the Calycadnus. As a group the autonomous tetradrachms of Elaeusa belong to the second decade of the first century B.C. and can be divided into three groups according to their monograms.



³¹ Seleucia Pieria, however, had been declared autonomous in 109/8 B.C. and remained independent through the reign of Tigranes.

³² Houghton, "Beroea?"

Obv. Head of city r., turreted and veiled; fillet border

Rev. ΕΛΑΙΟΥΣΙΩΝ ΤΗΣ ΙΕΡΑΣ ΚΑΙ AYTONOMOY Goddess (Aphrodite?) standing l., resting r. hand on tiller; to l., aplustre; wreath border

Group 1: In outer l. field, **\(\Lambda**\); in inner l. field, **AN**.

- 1. A1 P1 † 15.50 Paris, BN. Plate 19, 8.
- 2. A1 P2 ↑ 14.14 Broken. Washington, D.C., Smithsonian Institution. Hesperia Art 34, 122. Plate 19, 9.

Group 2: In outer 1. field, A; in inner 1. field, $I\Sigma I$.

3. A2 P3 ↑ 15.59 London, BM. Plate 19, 10.

Group 3: In outer 1. field, A; in inner 1. field, \(\bar{\bar} \)

4. A3 P4 † 15.82 Tkalec and Rauch, 16 Nov. 1987, 141. Hoard, 11; Plate 19, 11.

Chronology

The four tetradrachms of Elaeusa are evidently elements of a small, compact series, each related to the other by type, inscription, symbol, and the technical aspects of their fabrication, and the two tetradrachms of Group 1 are die linked. Since they are undated, the proposed informal chronology is based principally on the unsafe assumption that the qualitatively best examples preceded the more inferior.

Mørkholm believed the Elaeusan tetradrachms belonged to the first decades of the first century B.C.,³³ but a more specific chronology for the series can be established. They could not have been issued before ca. 95–94 B.C., when Seleucus VI struck coinage at Elaeusa;²⁴ and the likelihood that they were produced at least some short time later is in fact indicated by the slight differences of style between, on one hand, Seleucus's single known Elaeusan tetradrachm and, on the other, the city's autonomous issues, suggesting that the dies of the latter were worked later by different engravers. Yet the concurrence of many of



²³ Mørkholm, "Laodicea," p. 99.

A. Houghton and W. Moore, "Five Seleucid Notes," above, pp. 67-69.

the monograms which appear on Elaeusa's tetradrachms with those apparently issued under the same magistrates at Seleucia on the Calycadnus (below), and the evidently Attic weight standard employed at Elaeusa, places them not long after the mint at Seleucia closed, perhaps about 90 B.C. or a few years earlier. Elaeusa's autonomous tetradrachms were likely continued until Tigranes extinguished the city's independent existence in 83 B.C.

Metrology

Calculating the theoretical weight of the Smithsonian tetradrachm as a complete coin at 15.50 g gives a median weight for all four Elaeusan tetradrachms of 15.60 g. Although this is still at the lower end of the range for most full weight Attic coins of the early first century B.C., it is consistent with the weights of the last, large series of tetradrachms produced at Seleucia on the Calycadnus only a few years earlier as military specie during Seleucus VI's preparations for his campaign against Antiochus X and with the weights of the two known examples of Seleucus' tetradrachm coinage of Tarsus.35 The four Elaeusan coins comprise too limited a sample to be definitive, but the evidence suggests that Elaeusa may have followed Seleucia, and perhaps Tarsus, in adjusting the weights of its silver coinage to a new, light, but nevertheless Attic standard,36 these cities perhaps forming among themselves a coterminous economic area for a brief period. There is, unfortunately, no hoard evidence which might further clarify the metrology of these coins or the intended area of their circulation.³⁷

- ³⁶ At Seleucia on the Calycadnus, the average of 106 tetradrachms of Seleucus VI is 15.38 g; using an exclusion limit of 5%, the average weight of 81 coins is 15.57 g (the basic data is contained in Houghton, "Seleucia," forthcoming). The two tetradrachms of Seleucus VI of Tarsus average 15.19 g (one, in Paris, BN, 15.39 g; the second, in a private collection, 14.98 g). The single coin of Seleucus VI of Elaeusa, of 14.83 g, has lost much of its surface and does not provide a useful metrological reference.
 - 36 Mørkholm, "Laodicea," p. 99, "Aradian."
- ³⁷ As might be expected, there is no record in *IGCH*, *Coin Hoards*, etc., of any late Seleucid hoard with coins of full Attic weight and issues of Seleucus VI of Seleucia on the Calycadnus.



Monograms

The close monogram relationships between the tetradrachms of Elaeusa and the coins of Seleucus VI struck at Seleucia on the Calycadnus, which have led some scholars to suggest that the Seleucid issues were in fact struck at the former mint, have been the subject of comment elsewhere. AN, A, IDI and ZH all appear on Seleucid issues of Seleucia, IDI from as early as the first reign of Demetrius II (in Seleucia, 146/5–139 B.C.?). It seems likely that the mint officials thus represented moved to Elaeusa to continue their professions after the production of Seleucid coinage at Seleucia was discontinued and the mint at that city was shut down.

Type and Symbol

It is not clear what goddess is represented on the coins' reverses. Her dress—apparently both a long chiton and a himation, whose mantle has been pulled up and is draped over the left arm—is not distinctive. Nor is the coiffure. As the figure is shown on the coins, the hair has been combed back from the brow and rolled (perhaps around a fillet) backward on either side of the head, terminating in a knot at the rear; two long curls fall to the shoulder. These characteristics are known for Aphrodite, and also for matronly deities. The slight projection above the forehead, apparently a stephane, is appropriate for an Aphrodite of the period, but is not limited to her: the small tiara can be worn by a variety of goddesses (including Hera and Demeter), and the stephane is therefore not in itself an attribute.³⁹

The tiller is associated only with Tyche on coins of the period, however. A tiller-holding Tyche appears fairly frequently on later hellenistic issues, both royal Seleucid and local, but the figure has no



³⁸ A. R. Bellinger, "A Seleucid Mint at Elaeusa Sebaste," ANSMN 3 (1948), p. 29; G. K. Jenkins, "Recent Acquisitions of Greek Coins by the British Museum," NC 1959, pp. 44-45, 26.

³⁰ Special thanks go to Prof. Brunilde Ridgway, Bryn Mawr, for her thoughtful observations on the figure's dress, coiffure, and attributes.

attribute (turreted crown or polos) otherwise associated with Tyche. Whatever the circumstance, the tiller and the city's symbol, an aplustre, which appears on both the city's royal and autonomous tetradrachms, suggest that Elaeusa took some pride in its nautical achievements. Perhaps to commemorate these, the citizens of Elaeusa may have set up a cult statue which is thus represented on the reverses of its coins, much in the manner of other cities in Cilicia and the Syrian north.⁴⁰

⁴⁰ Examples include the Athena figure on the coinage of Seleucia on the Calycadnus, which shows attributes specific only to this city and which probably reflects a cult statue set up during the second century B.C. (Houghton, "Seleucia," forthcoming); the Athena Magarsia of Mallus (A. Houghton, "The Seleucid Mint of Mallus and the Cult Figure of Athena Magarsia," *Studies Mildenberg*, esp. pp. 91–110); and the several cult figures important to Antioch, including Bryaxis' Apollo and Eutychides' Tyche.



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ZINC CONTENT OF NERONIAN SEMISSES AND QUADRANTES AND THE RELATIVE VALUE OF ZINC AND COPPER IN THE COINS OF NERO

GILES F. CARTER

Chemical analysis is a powerful tool for helping numismatists solve certain problems. For instance, Caley and Riederer¹ have described in detail the debasement of Roman orichalcum coinage. Carter² has pointed out the brilliant policies of Augustus for aes coinage in which the primary mints of Rome and Lugdunum struck in pure copper or orichalcum (copper-zinc alloy, or brass), whereas Antioch struck pure bronze (copper-tin) coins, and all other mints were apparently directed to avoid these primary compositions. Many other examples could be given where chemical analyses have proved beneficial to numismatic studies.

MacDowall³ observed that Neronian sestertii and dupondii of Rome contain only about 16% zinc (balance mainly copper), whereas similar coins minted in Lugdunum contain about 20% zinc. This has been confirmed by Carter and King.⁴ It is the purpose of this report to

- ¹ E. R. Caley, *Orichalcum and Related Ancient Alloys*, ANSNNM 151 (1964); J. Riederer, "Metallanalysen römischer Sesterzen," *JNG* 24 (1974), pp. 73–98.
- ² G. F. Carter, "Compositions of Some Copper-Based Coins of Augustus and Tiberius," *Science and Archaeology* (Cambridge, MA, 1971), pp. 114-30.
 - ³ D. MacDowall, "The Quality of Nero's Orichalcum," SM 16 (1966), pp. 101-5.
- ⁴ G. F. Carter and C. E. King, "Chemical Compositions of Copper-Based Roman Coins 4, Tiberius to Nero A.D. 34-66," *Metallurgy in Numismatics* 1 (London, 1980), pp. 157-67.



present chemical analyses of 17 semisses and 59 quadrantes of Nero. These analyses indicate that the Romans deliberately reduced the zinc contents of semisses and quadrantes compared with dupondii and sestertii and permit an estimate of the relative value of zinc and copper in Neronian coins.

PROCEDURE

The coins⁵ were carefully prepared for analysis by 1) electrolytic reduction of surface oxides (the coins were made the cathode in a hot solution of sodium carbonate, thereby preventing any removal of metal); 2) drying and removing adhering dirt using an eraser; 3) cleaning for two minutes each on the obverse and reverse in a cabinet using chemically pure aluminum oxide powder in a stream of air. Then the coins were weighed, and the following physical properties were measured: maximum thickness, maximum diameter, minimum diameter, density, and die orientation. These results are summarized in Table 1.

The coins were analyzed using x-ray fluorescence, a method that analyzes a very thin layer of metal at the surface (about 5 to 15 μ m thick, or roughly 0.2 to 0.6 thousandths of an inch). The method has been discussed in detail by Carter and Booth.⁶ Carter and Kimiatek⁷ showed that copper and brass coins usually do not have appreciable concentration gradients. Therefore copper and brass coins may by analyzed accurately by x-ray fluorescence because a properly cleaned surface has essentially the same chemical composition as the coin interior. However, because of appreciable concentration gradients of lead and sometimes tin in leaded bronze coins, the x-ray fluorescence method produces somewhat erroneous results for these elements in leaded bronze coins.⁸

- ⁵ All coins analyzed here were on loan from A. H. Baldwin & Sons, Ltd. I thank them most sincerely for enabling this study to be done.
- ⁶ G. F. Carter and M. M. Booth, "X-Ray Fluorescence Analysis of Copper-Based Coins," *Problems of Medieval Coinage in the Iberian Area* (Santarem, Portugal, 1984), pp. 49-69.
- ⁷ G. F. Carter and M. H. Kimiatek, "Comparison of Surface with Interior Compositions of Eight Roman Copper-Based Coins," *Archaeo-Physika* 10 (1979), pp. 82-96.
 - ⁸ Carter and Kimiatek, p. 91.



Carter and Booth⁹ report that only a very thin layer of metal, 10 to $15\,\mu\text{m}$, must be removed from orichalcum coins prior to analysis by x-ray fluorescence. However, Craddock et al.¹⁰ say that a thicker layer of metal must be removed. This apparent discrepancy is due to the different methods of removing metal. Carter and Booth removed a thin metal layer parallel to the surface on a micro scale, whereas Craddock et al. abraded metal parallel to the surface of the coin on a macro scale. The latter method requires removal of much more metal because one must remove metal to a depth greater than the deepest pits or cavities. The micro method of cleaning removes corroded metal from inside pits and cavities, and therefore much less metal needs to be removed overall to obtain good analyses by x-ray fluorescence.

PHYSICAL MEASUREMENTS

Because the coins in this study were at the bottom of the Tiber River for about 1900 years, the surfaces were somewhat corroded, and the weights of the coins are lower on the average than other similar coins. On the other hand, collections in large museums often contain coins in choice condition, frequently weighing more than the average of newly minted coins. Furthermore, if corrosion products are removed from a coin, its weight is lower than the original weight, but if the corrosion products remain on the coin, its weight should be slightly more than its uncorroded weight. The weights of the Neronian coins in this report average several tenths of a gram less than those of corresponding coins in the British Museum (e.g., 2.70 ± 0.41 g for these semisses versus 3.55 ± 0.57 g for orichalcum semisses in the British Museum).

In Table 1, note the heavier weights for coins of pure copper compared with the orichalcum coins of the same denomination, as expected. For instance, the copper semis weighs $4.40 \, \mathrm{g}$ compared with an average weight of $2.70 \pm 0.41 \, \mathrm{g}$ for 16 orichalcum semisses. Nine



[•] Carter and Booth (above, n. 6), p. 55.

¹⁰ P. T. Craddock, A. M. Burnett, and K. Preston, "Hellenistic Copper-Base Coinage and the Origins of Brass," *Scientific Studies in Numismatics*, ed. W. A. Oddy (London, 1980), pp. 53-64.

copper quadrantes have an average weight of $1.95 \pm 0.50\,\mathrm{g}$ compared with the average weight of $1.48 \pm 0.28\,\mathrm{g}$ for 50 orichalcum quadrantes. The orichalcum semisses weigh less than twice as much as an orichalcum quadrans on the average: $2.70\,\mathrm{g}$ for the average orichalcum semis compared with $1.48\,\mathrm{g}$ for the average orichalcum quadrans. This same discrepancy is found in the average weights of orichalcum semisses and quadrantes in the British Museum ($3.55\,\mathrm{g}$ for orichalcum semisses versus $2.10\,\mathrm{g}$ for orichalcum quadrantes). Later we shall see that this is due to the lower zinc concentration of quadrantes compared with semisses. Copper quadrantes on the average are appreciably larger in diameter than orichalcum quadrantes as shown in Table 1 ($1.640\,\mathrm{cm}$ average diameter for the copper and $1.458\,\mathrm{cm}$ average diameter for the orichalcum quadrantes).

The densities shown in Table 1 are also enlightening. The density of pure copper is 8.93 grams per cubic centimeter, whereas the density of orichalcum (brass) is less than that of copper: the higher the zinc concentration, the lower the density, which may be as low as $8.6 \, \mathrm{g/cm^3}$ for brass containing over 30% zinc. Indeed, the densities of the nine copper quadrantes average $8.95 \pm 0.02 \, \mathrm{g/cm^3}$. These results show the high accuracy and good precision possible in density measurements even of small coins (the standard deviation is very small: 0.02). The densities of the orichalcum coins are less than the density of pure copper: an average density of $8.78 \, \mathrm{g/cm^3}$ for the orichalcum semisses compared with an average density of $8.85 \, \mathrm{g/cm^3}$ for the orichalcum quadrantes. The orichalcum quadrantes contain less zinc on the average than the orichalcum semisses, and the densities are in excellent agreement with this fact.

The die orientations average between 6:00 and 6:30. Only a few exceptions to the apparent standard orientation of 6:00 occur, and these differ by 180°, an easy mistake to make. However, three of the five quadrantes (BMC 291 Gotha) have orientations of 12:00 or 1:00. It is not known whether this is significant.

Not only are the physical measurements informative in several ways, they are also useful in uniquely identifying coins. So long as these coins are not physically damaged in the future, they may always be easily identified by their physical measurements.



CHEMICAL COMPOSITION OF NERONIAN SEMISSES

Chemical composition of seventeen Neronian semisses are given in Table 2. Only one of these semisses is made of pure copper, coin R-1212, which weighs appreciably more than the orichalcum semisses: $4.40\,\mathrm{g}$ versus an average of $2.70\,\mathrm{g}$ for the orichalcum semisses. The average zinc concentration of the orichalcum semisses is $11.1\pm2.4\%$. This should be compared with the average concentration of $17.4\pm1.8\%$ zinc in five Neronian sestertii and $16.5\pm0.6\%$ zinc in four Neronian dupondii minted in Rome (see Table 3). All the known chemical analyses of Neronian dupondii and sestertii are given in Table 3.

One must conclude that the much lower zinc content of semisses, compared with that of dupondii and sestertii, were deliberate. The magnitude of the standard deviations shows that the orichalcum semisses definitely contain less zinc on the average than the sestertii or dupondii (and probably orichalcum asses). For other elements in the semisses the composition varies only over rather narrow ranges: see the low standard deviations in Table 2. This indicates that fairly similar ore samples and conditions of smelting and purifying the metal were used to make these coins (they were not made from remelted coins or other metallic objects).

In Table 3 the sestertii analyzed by Riederer¹¹ and by Phillips¹² were not identified. These sestertii were probably minted in Rome judging from their relatively low zinc content; however, coin JR-36 may have been minted in Lugdunum because its zinc concentration is over 20%. The analysis of JR-52 indicates a very low zinc concentration, only 9.6%, and a high silver content. Possibly this coin was an imitation, and it has been omitted from the calculation of the average zinc concentration of Neronian sestertii. Likewise the coin ERC-11 was omitted from consideration because it is most unusual: its weight was 17.9 g, extremely high for Neronian dupondii (although one dupondius in the British Museum approaches this weight), and its zinc content is abnormally high.



¹¹ Riederer (above, n. 1), p. ôô.

¹² J. A. Phillips, Journal of the Chemical Society 4 (1852), pp. 252-300.

The pure copper semis contains much less iron than the orichalcum coins; usually pure copper coins contain less iron than orichalcum coins. Also the tin content of the copper semis is much lower than that of the orichalcum coins. The antimony is a little lower in the copper semis, but the remaining trace elements are about the same in the copper semis and the orichalcum semisses.

CHEMICAL COMPOSITIONS OF NERONIAN QUADRANTES

Nine copper quadrantes and fifty orichalcum quadrantes were analyzed by x-ray fluorescence. The results appear in Table 4. There are several noteworthy aspects of the composition of the nine copper quadrantes; 1) the zinc content is usually very low, showing only slight contamination by zinc (perhaps from the ore, or possibly orichalcum was in use nearby at the same time and therefore was a likely contaminant); 2) two coins, R-1333 and R-1330, have appreciable zinc content, probably from inclusion of some scrap in the melting process; 3) the two coins with relatively high zinc content also have relatively high tin content; 4) the two BMC 287 coins have identical composition within experimental error, and the high antimony content of these two coins is unusual; 5) in general when the coins are grouped according to their catalogue number the composition is similar; 6) the Neronian coins contain relatively higher iron and much higher silver, tin, antimony, and lead concentrations than Claudian quadrantes; 14 7) the copper quadrantes surprisingly are somewhat different in composition from the copper semis, coin R-1212.

The following are noteworthy results of the analyses of the fifty orichalcum quandrantes of Nero: 1) the group of five coins, BMC 291 Gotha, form a very tight compositional group and are nearly identical; 2) the BMC 291 Gotha group has relatively high zinc content, from 12 to 13%; 3) 11 of the 50 coins contain relatively high lead content, \rangle 1%,



¹⁸ Carter and King (above, n. 4), p. 165, and Craddock et al. (above, n. 10), p. 56.

¹⁴ Cf. G. F. Carter, "Chemical Compositions of Copper-Based Roman Coins: Claudian Quadrantes A.D. 41-42," *Archaeological Chemistry* 3 (Washington, 1984), pp. 311-29.

either arising from the deliberate addition of lead to the alloy or from the use of remelted scrap; 3) the nickel, silver, and antimony contents are similar in all fifty coins (i.e., the standard deviations are small); 4) the iron content tends to be relatively high and fairly variable, which is normal for orichalcum coins; 5) the tin content is moderately high for coins not having tin deliberately added, and the variability (standard deviation) is moderately higher; 6) the zinc content is highly variable in general, although certain groups are similar; 7) the mean zinc content is $8.7 \pm 3.3\%$, which is appreciably below the zinc content of $11.1 \pm 2.4\%$ for the semisses; 8) the trace element concentrations are significantly different from those of the orichalcum semisses.

The analyses show that Nero not only debased the orichalcum sestertii and dupondii to around 16 to 18% zinc as opposed to above 20% zinc in coins of Claudius, but also that his semisses contained much less zinc than the dupondii and sestertii, namely about 11%, and the orichalcum quadrantes contained even less, only about 9% zinc on the average. The quality control over the zinc content of the quadrantes was poor and many have much less zinc than the probable standard. Probably many of the orichalcum quadrantes were made from metal containing remelted scrap.

RELATIVE VALUE OF COPPER AND ZINC IN NERONIAN COINAGE

From the relative weights of dupondii and asses it is obvious that the value of zinc was several times that of copper in Roman coins. However, it is difficult to determine the true average weight for a given denomination of ancient coins. Several factors complicate this calculation: quality control, compliance with standards, wear, oxidation, and other corrosion. However, the weights of coins in the British Museum are probably a fairly good measure of the standard weights in use by the Romans. Coins in the British Museum often tend to be outstanding specimens, which in general may be a little in excess of the standard weight. However, some coins in the collection are somewhat worn and/or corroded, tending to balance the excessive weights of other coins. Mean weights and standard deviations were calculated for all the BMC copper coins of Nero minted in Rome (see Table 5).



Taking the Roman pound to weigh 327 g and assuming that the standards specified a given number of coins to the pound, one can calculate the hypothetical standard weights of coins. For instance, if the standard for Neronian sestertii were twelve sestertii to the pound, then the calculated average weight for a sestertius is $27.2 \, \mathrm{g}$ compared with an average weight of $26.6 \pm 1.8 \, \mathrm{g}$ for 77 Neronian sestertii in the British Museum. One might then infer that the average weight of dupondii should be half that, $13.6 \, \mathrm{g}$, and that of orichalcum asses should be one-quarter of that, $6.8 \, \mathrm{g}$. However, the inferred average weight of orichalcum asses, namely $6.8 \, \mathrm{g}$, is significantly lower than the actual average weight of $8.6 \, \mathrm{g}$ (Table 5).

The value of orichalcum coins, of course, depends on their total weight and the percentage of that weight which is zinc, as well as the cost of manufacture, which is proportionately higher for small coins. According to the results of the x-ray fluorescence analyses, the zinc contents of semisses and quadrantes are far below those of sestertii and dupondii. I hypothesize that the Romans had a different standard for the orichalcum content of each coin denomination struck under Nero. The orichalcum standards were probably based on simple ratios of copper and orichalcum containing approximately the maximum concentration of zinc obtainable: about 26 to 28% zinc given the techniques used by the Romans, so 27% zinc is used as the typical zinc content of Roman orichalcum (pure—not diluted with copper).

Table 5 contains hypothetical standards for the zinc content of the five denominations of orichalcum coins of Nero. The known chemical compositions are in good agreement with the hypothetical orichalcum content (compare the last two columns in Table 5). However, far too few sestertii, dupondii, and no orichalcum asses of Nero have been chemically analyzed (Table 3); many more coins must be chemically analyzed to obtain accurate hypothetical orichalcum standards. Furthermore the quality control in the production of orichalcum probably was only fair at best (perhaps 24 to 28% zinc). Considering the complexity of quality control problems, one is not surprised that the zinc contents of Neronian orichalcum coins vary considerably in a given denomination.

15 Craddock et al. (above, n. 10), p. 60.



If the five orichalcum denominations of Neronian coins contained different concentrations of zinc, then obviously the weights of the coins would not be simple multiples of a basic weight. The value of zinc added to the coins must have been tariffed at some given figure for all denominations. Based on a fixed value of zinc relative to copper (or more likely, of orichalcum to copper) and the standard orichalcum contents, the Romans must have calculated the standard weights for the various denominations. Hypothetical weight standards are compared in Table 5 with average weights of coins in the British Museum. In most cases reasonable agreement results between the British Museum coins and the hypothetical weight standards calculated from a fixed number of coins to the Roman pound.

It is possible to calculate the weight of each copper denomination equivalent in value to its lighter orichalcum denomination if one assumes a given relative value of zinc to copper. For instance, if the Roman standards were as presented in Table 5, then a sestertius weighing 27.2 g should contain 18.0% zinc times 27.2 g, or 4.9 g of zinc and 22.3 g of copper, as in columns two and three in Table 6. If one assumes a relative value of one gram of zinc equals six grams of copper, then the equivalent weight of copper for a sestertius would be 22.3 g copper plus 6 times 4.9 g of zinc for a total equivalent copper weight of 51.7 g. Likewise, when similar calculations are made for the other denominations, the results of Table 6 are obtained. Note that the equivalent copper weights for the five denominations, sestertius, dupondius, as, semis, and quadrans, should be in the ratio of 16 to 8 to 4 to 2 to 1, and the ratios of the calculated equivalent weights of copper are very nearly that in Table 6.

In comparing the weights of copper asses with those of orichalcum asses, as well as semisses and quadrantes, the ratio of these weights yields the approximate relative values of zinc and copper—values which are highly variable but average roughly six grams of copper equal to one gram of zinc. The average weights are sometimes untrustworthy due to the relatively small number of coins of either copper or orichalcum for the same denomination (Table 5, column five); based on these data, it appears that one gram of zinc had the same value as six grams of copper in the coins of Nero. This ratio of zinc to copper values corresponds to



the following: one g of orichalcum, assumed to contain 27% zinc on the average, had the same value as 2.35 g of copper.

Conclusion

Chemical analyses of Neronian semisses and quadrantes show that these orichalcum coins contain appreciably lower zinc concentrations than Neronian sestertii and dupondii. The hypothetical weight and composition standards presented for all denominations of copper and orichalcum coins of Nero are in reasonably good agreement with known weights and compositions. If these hypothetical composition and weight standards are essentially correct, then the complex system for the copper-based coinage of Nero was indeed a brilliant one. Trace elements in Neronian coins are usually much higher than those in Claudian coins, suggesting that Claudian (or earlier) coins were not simply melted down to make Neronian coins. The hypothetical compositional standards need to be checked further by analyzing more Neronian sestertii and dupondii, and especially orichalcum asses (none of these coins has been reliably chemically analyzed yet). Unfortunately, the relatively poor quality control in producing orichalcum, compounded with other quality control problems, results in a rather wide spread of zinc concentrations in Neronian orichalcum coins.

Table 1

Physical Measurement of Neronian Semisses and Quadrantes

ВМС	ID No.	Weight, g	Max. Thick., cm	Max Diam., cm	Min. Diam., cm	Die Orien- lation	Density, g/cm³
Copper Sen	nis						
260 var.	R-1212	4.3975	0.260	1.957	1.790	6:00	8.93
Orichalcum	Semisses						
261	R-1223	2.9222	0.239	1.808	1.662	6:00	8.77
261	R-1224	3.4901	0.322	1.818	1.761	6:30	8.64
261?	R-1216	2.5204	0.238	1.768	1.597	6:30	8.77



ВМС	ID No.	Weight, g	Max.	Max	Min.	Die Orien-	Density,
			Thick., cm	Diam., cm	Diam., cm	tation	g/cm³
263	R-1221	2.2023	0.242	1.864	1.757	6:00	8.77
263	R-1222	3.0776	0.289	1.758	1.625	7:00	8.78
264	R-1214	2.0378	0.253	1.751	1.605	6:00	8.83
265 var	R-1215	2.3199	0.254	1.829	1.685	7:00	8.71
267	R-1213	3.0486	0.262	1.747	1.691	6:30	8.78
271	R-1219	2.3364	0.217	1.798	1.725	6:00	8.81
271 var.	R-1217	2.3330	0.228	1.763	1.665	6:30	8.77
272?	R-1220	2.7305	0.228	1.665	1.578	6:30	8.83
275	R-1218	2.7234	0.240	1.748	1.591	5:30	8.80
279 var	R-1210	2.6935	0.250	1.666	1.561	6:00	8.77
280	R-1211	3.0829	0.263	1.676	1.598	7:30	8.77
285 var.	R-1208	3.1680	0.243	2.036	1.905	12:30	8.85
?	R-1209	2.5294	0.205	1.768	1.714	6:30	8.83
Mean		2.70	0.248	1.779	1.670		8.78
Stan. Dev.		0.41	0.028	0.089	0.089		0.05
Copper Qua	ndrantes						
286	R-1318	2.4577	0.194	1.679	1.561	5:30	8.92
286	R-1319	1.5196	0.134	1.701	1.627	5:30	8.92
286 or 7	R-1323	1.2389	0.158	1.559	1.484	7:00	8.94
287	R-1321	1.6340	0.159	1.594	1.493	7:00	8.94
287	R-1322	1.8584	0.202	1.526	1.480	6:30	8.97
289	R-1328	2.7988	0.199	1.806	1.584	7:30	8.95
289	R-1329	2.1693	0.178	1.763	1.495	7:00	8.96
289	R-1333	1.6831	0.178	1.492	1.381	6:00	8.97
290	R-1330	2.2152	0.212	1.640	1.495	7:00	8.95
Mean		1.95	0.179	1.640	1.511		8.95
Stan. Dev.		1.50	0.025	0.107	0.071		0.02
Orichalcum	Quadranto	•					
291 Gotha	R-1307	1.3543	0.161	1.411	1.357	12:00	8.72
291 Gotha	R-1307 R-1309	1.4709	0.176	1.381	1.279	1:00	8.72 8.70
291 Gotha	R-1310	1.4709	0.176	1.401	1.351	1:00	8.73
291 Gotha		1.7613		1.446		6:30	
291 Gotha	R-1314		0.194		1.387		8.72
291 Gotna 291	R-1313	1.4115	0.178 0.191	1.405	1.306	6:30 6:30	8.71 8.75
	R-1303	1.5252		1.441	1.319		
291	R-1327	1.4362	0.179	1.468	1.324	6:00	8.83
291	R-1305	1.3412	0.144	1.424	1.363	6:00	8.91
291 Webb	R-1312	1.4949	0.167	1.382	1.303	6:00	8.93
291 Webb	R-1325	2.0210	0.212	1.474	1.349	7:00	8.78
291 P, C	R-1316	1.1108	0.158	1.364	1.267	5:30	8.98



ВМС	ID No.	Weight, g	Max.	Max	Min.	Die Orien-	Density,
		3, 3	Thick., cm	Diam., cm	Diam., cm	tation	g/cm²
291 P, C	R-1338	1.3730	0.146	1.505	1.438	5:30	8.99
291 var.	R-1300	1.4134	0.162	1.529	1.446	7:30	8.55
291 var.	R-1306	1.4040	0.176	1.404	1.298	6:00	8.71
291 ?	R-1320	1.9407	0.194	1.579	1.505	6:30	8.88
291 ?	R-1301	1.8149	0.169	1.490	1.387	6:30	8.66
293	R-1311	1.8404	0.220	1.372	1.278	6:30	8.76
294	R-1302	0.9433	0.128	1.474	1.423	6:30	8.77
294	R-1324	1.5849	0.174	1.489	1.347	6:30	8.89
294 var.	R-1308	1.2109	0.150	1.519	1.411	6:30	8.76
294 var.	R-1335	1.2786	0.134	1.520	1.468	12:30	8.97
294 var.	R-1337	1.5172	0.197	1.553	1.410	7:00	8.88
294 var.	R-1336	1.5085	0.184	1.436	1.360	7:00	8.78
294 var.	R-1342	1.3094	0.153	1.528	1.448	6:00	8.88
295	R-1317	1.5093	0.208	1.381	1.271	7:00	8.87
296	R-1315	1.6858	0.187	1.446	1.348	7:30	8.82
296	R-1334	1.8653	0.184	1.522	1.467	6:30	8.98
296	R-1341	1.5224	0.180	1.446	1.337	6:00	9.00
297	R-1326	1.5006	0.194	1.461	1.339	7:00	8.90
298	R-1348	1.8366	0.217	1.382	1.283	6:00	8.84
298	R-1350	1.3691	0.188	1.296	1.208	6:30	8.95
299	R-1331	1.2532	0.133	1.544	1.511	12:30	8.87
299	R-1332	1.4350	0.176	1.415	1.340	6:30	8.87
300	R-1355	1.3030	0.179	1.424	1.344	5:30	8.86
300	R-1358	1.1017	0.171	1.369	1.285	5:30	8.92
300?	R-1356	1.8050	0.226	1.346	1.311	7:00	8.87
301	R-1357	1.2784	0.163	1.431	1.298	12:00	8.93
301 var.	R-1346	1.6428	0.187	1.498	1.358	6:30	8.88
301 var.	R-1349	1.5755	0.163	1.590	1.432	12:00	8.93
301 var.	R-1351	2.2847	0.218	1.515	1.440	6:00	8.82
301 var.	R-1343	1.2366	0.135	1.519	1.455	7:30	8.98
301 var.	R-1345	0.7907	0.118	1.446	1.381	5:30	9.06
301 var.	R-1347	1.4469	0.186	1.505	1.413	6:30	8.88
301 var.	R-1359	1.6023	0.199	1.380	1.284	6:00	8.88
301?	R-1344	1.4584	0.152	1.644	1.345	6:30	9.02
301 ?	R-1353	1.8065	0.206	1.410	1.332	6:00	8.90
301 ?	R-1354	1.6281	0.178	1.577	1.275	6:30	8.90
302	R-1340	1.2938	0.160	1.454	1.412	6:30	8.87
302 var.?	R-1339	1.5041	0.180	1.503	1.420	6:00	8.82
?	R-1304	1.2056	0.149	1.402	1.313	6:00	8.72
Mean		1.48	0.175	1.458	1.361		8.85
Stan. Dev.		0.28	0.025	0.072	0.069		0.10



Table 2

Chemical Composition of Neronian Semisses in Weight Percent

ВМС	ID No.	Fe^{a}	Ni	Cu	Zn	Ag	Sn	Sb	Pb
260 var.	R-1212	0.055	0.015	99.6	N^b	0.040	0.008	0.050	0.24
261	R-1223	0.343	0.018	86.4	12.8	0.054	0.029	0.088	0.24
261	R-1224	0.276	0.021	83.7	15.6	0.040	0.061	0.076	0.26
261?	R-1216	0.316	0.018	86.9	12.4	0.049	0.064	0.075	0.21
263	R-1221	0.355	0.021	86.0	13.2	0.038	0.048	0.072	0.25
263	R-1222	0.275	0.019	89.6	9.7	0.060	0.072	0.074	0.25
264	R-1214	0.297	0.017	90.5	8.7	0.053	0.058	0.084	0.26
265 var.	R-1215	0.353	0.024	84.7	14.5	0.054	0.075	0.075	0.26
267	R-1213	0.343	0.013	87.9	11.3	0.055	0.065	0.070	0.26
271	R-1219	0.212	0.020	90.5	8.9	0.058	0.032	0.074	0.23
271 var.	R-1217	0.268	0.023	87.0	12.3	0.069	0.014	0.091	0.21
272?	R-1220	0.207	0.019	89.8	9.6	0.062	0.042	0.067	0.23
275	R-1218	0.253	0.018	89.2	10.1	0.056	0.064	0.072	0.23
279 var.	R-1210	0.397	0.021	87.0	12.1	0.048	0.121	0.074	0.27
280	R-1211	0.233	0.017	87.9	11.4	0.045	0.057	0.073	0.26
285 var.	R-1208	0.192	0.024	92.2	7.1	0.047	0.091	0.058	0.26
?	R-1209	0.259	0.019	91.0	8.3	0.057	0.065	0.083	0.24
Mean		0.286	0.020	88.1	11.1	0.053	0.060	0.075	0.24
Stan. Dev.		0.060	0.003	2.4	2.4	0.008	0.025	0.008	0.02

^{*} Fe, iron; Ni, nickel; Cu, copper; Zn, zinc; Ag, silver; Sn, tin; Sb, antimony; Pb, lead.

Table 3

Chemical Composition of Neronian Dupondii and Sestertii Minted in Rome in Weight Percent

BMC	ID No.	Fe	Ni	Cu	Zn	Ag	Sn	Sb	Pb
Sestertii									
142	GFC-789°	0.110	0.028	83.4	16.2	0.051	0.007	0.066	0.11
Unk	JR-36	0.42	0.01	78.7	20.4	0.07	0.50	0.18	0.10
Unk.	JR-13	0.28	0.01	82.0	16.6	0.07	—ь	0.07	0.55

^a GFC, G. F. Carter; JR, J. Riederer; JAP, J. A. Phillips; ERC, E. R. Caley.



^b None detected.

^b Not determined.

104			GIL	ES F. (CARTER	t			
Unk.	JR-53	0.16	0.02	82.0	16.0	0.08		0.06	0.20
Unk.	JR-52	0.06	0.02	89.0	9.6	0.27	_	0.03	0.10
Unk.	JAP-2	_	ND°	81.07	17.82	ND		ND	_
Dupondii									
Cohen 322 ^d	GFC-057	0.221	0.004	81.9	17.3	0.041	0.126	0.069	0.28
193 var.	GFC-787	0.066	0.012	83.3	16.4	0.052	0.013	0.086	0.13
206	GFC-786	0.134	0.013	83.3	16.3	0.057	0.059	0.082	0.11
200	ERC-10	0.40	0.03	83.16	15.95	0.06	0.01	_	0.13
214	ERC-11	0.16	⟨0.01	77.27	22.46	0.08	⟨0.01		0.15

^{&#}x27; Not detected.

Table 4

Chemical Composition of Neronian Quadrantes in Weight Percent

ВМС	ID No.	Fe	Ni	Cu	Zn	Ag	Sn	Sb	Pb
Copper									
286	R-1318	0.045	0.016	99.3	0.02	0.043	0.009	0.075	0.53
286	R-1319	0.023	0.011	99.1	0.03	0.056	0.009	0.098	0.64
286 or 7	R-1323	0.247	0.006	98.7	0.13	0.075	0.012	0.054	0.74
287	R-1321	0.346	0.015	98.9	0.03	0.106	0.014	0.30	0.27
287	R-1322	0.351	0.016	98.9	0.005	0.110	0.015	0.31	0.31
289	R-1328	0.162	0.013	99.2	0.06	0.083	0.021	0.129	0.31
289	R-1329	0.288	0.015	99.1	0.05	0.079	0.018	0.138	0.28
289	R-1333	0.088	0.020	98.7	0.40	0.070	0.20	0.098	0.46
290	R-1330	0.288	0.017	97.0	1.7	0.065	0.21	0.098	0.61
Mean		0.204	0.014	98.8	0.27	0.076	0.056	0.144	0.46
Stan. Dev.		0.128	0.004	0.7	0.55	0.022	0.084	0.094	0.18
Orichalcum									
291 Gotha	R-1307	0.292	0.011	85.9	13.2	0.041	0.138	0.077	0.36
291 Gotha	R-1309	0.263	0.011	86.6	12.4	0.051	0.156	0.082	0.35
291 Gotha	R-1310	0.273	0.011	86.7	12.4	0.041	0.158	0.074	0.36
291 Gotha	R-1314	0.256	0.010	86.4	12.7	0.047	0.140	0.067	0.35
291 Gotha	R-1313	0.254	0.010	86.9	12.2	0.051	0.132	0.080	0.40
Mean		0.268	0.011	86.5	12.6	0.046	0.145	0.076	0.36
Stan. Dev.		0.016	0.0005	0.4	0.4	0.005	0.012	0.006	0.02



^d H. Cohen, Description historique des monnaies frappées sous l'empire romain... médailles impériales (London, 1880).

ВМС	ID No.	Fe	Ni	Cu	Zn	Ag	Sn	Sb	Pb
291	R-1303	0.191	0.016	86.8	10.0	0.036	0.34	0.070	2.6
291	R-1327	0.226	0.018	89.4	9.7	0.065	0.065	0.099	0.37
291	R-1305	0.128	0.013	86.9	7.2	0.038	0.28	0.058	5.3
291 Webb	R-1312	0.149	0.014	91.5	6.0	0.056	0.149	0.092	2.1
291 Webb	R-1325	0.293	0.019	86.3	12.6	0.074	0.053	0.110	0.47
291 P, C	R-1316	0.118	0.010	91.0	5.1	0.046	0.43	0.074	3.2
291 P, C	R-1338	0.232	0.012	91.5	4.7	0.061	0.134	0.087	3.2
291 var.	R-1300	0.282	0.015	83.2	15.9	0.056	0.023	0.091	0.34
291 var.	R-1306	0.254	0.011	87.1	12.1	0.050	0.107	0.081	0.32
291?	R-1320	0.316	0.013	92.3	5.2	0.060	0.146	0.087	1.8
291?	R-1301	0.467	0.017	85.5	13.5	0.046	0.098	0.079	0.35
293	R-1311	0.159	0.011	91.3	5.9	0.066	0.162	0.097	2.4
294	R-1302	0.293	0.018	87.9	11.2	0.049	0.059	0.091	0.38
294	R-1324	0.308	0.014	91.4	7.4	0.056	0.129	0.082	0.42
294 var.	R-1308	0.218	0.015	91.3	7.8	0.066	0.133	0.087	0.34
294 var.	R-1335	0.101	0.012	95.3	4.1	0.064	0.081	0.078	0.31
294 var.	R-1337	0.352	0.013	90.1	8.9	0.065	0.079	0.094	0.36
294 var.	R-1336	0.46	0.016	86.3	12.7	0.063	0.117	0.072	0.30
294 var.	R-1342	0.254	0.011	89.4	9.7	0.049	0.064	0.083	0.36
295	R-1317	0.337	0.013	91.2	7.7	0.053	0.139	0.083	0.41
296	R-1315	0.205	0.014	91.4	7.9	0.061	0.106	0.079	0.30
296	R-1334	0.177	0.013	89.9	6.2	0.055	0.24	0.081	3.3
296	R-1341	0.220	0.015	92.8	4.1	0.056	0.186	0.082	2.5
297	R-1326	0.260	0.016	91.5	7.4	0.056	0.114	0.083	0.62
298	R-1348	0.212	0.014	91.3	7.9	0.059	0.087	0.087	0.28
298	R-1350	0.131	0.014	94.7	4.6	0.064	0.101	0.099	0.29
299	R-1331	0.185	0.017	94.1	5.1	0.064	0.101	0.079	0.30
299	R-1332	0.49	0.015	89.5	9.5	0.079	0.058	0.101	0.30
300	R-1355	0.253	0.012	86.3	12.8	0.052	0.148	0.076	0.35
300	R-1358	0.231	0.015	90.9	8.3	0.065	0.102	0.085	0.28
300?	R-1356	0.368	0.018	90.3	8.7	0.067	0.083	0.117	0.31
301	R-1357	0.223	0.014	92.8	6.5	0.045	0.083	0.081	0.32
301 var.	R-1346	0.184	0.014	93.4	5.6	0.067	0.37	0.090	0.31
301 var.	R-1349	0.152	0.017	94.5	4.8	0.064	0.080	0.076	0.29
301 var.	R-1351	0.151	0.010	86.6	11.5	0.057	0.169	0.097	1.4
301 var.	R-1343	0.140	0.014	94.3	4.7	0.077	0.47	0.095	0.27
301 var.	R-1345	0.096	0.015	94.5	4.5	0.071	0.53	0.085	0.26
301 var.	R-1347	0.48	0.015	90.4	8.5	0.078	0.080	0.105	0.35
301 var.	R-1359	1.34	0.014	90.0	7.8	0.065	0.150	0.112	0.43
301?	R-1344	0.075	0.016	97.0	2.2	0.075	0.32	0.087	0.27
301?	R-1353	0.275	0.012	86.2	10.2	0.049	0.22	0.076	2.9
301?	R-1354	0.338	0.017	92.6	6.5	0.066	0.073	0.101	0.31



ВМС	ID No.	Fe	Ni	Cu	Zn	Ag	Sn	Sb	Pb
302	R-1340	0.63	0.012	86.0	12.7	0.051	0.103	0.081	0.38
302 var.?	R-1339	0.51	0.013	87.2	11.7	0.060	0.091	0.091	0.31
?	R-1304	0.237	0.013	86.1	13.0	0.037	0.127	0.062	0.47
Mean		0.281	0.014	89.9	8.7	0.058	0.154	0.086	0.88
Stan. Dev.		0.192	0.002	3.2	3.3	0.011	0.110	0.012	1.12

TABLE 5

Chemical Composition and Weight Standards of Neronian Copper and Orichalcum Coins

Denom.	No. of Coins	Actual No. of Coins per 1b.	Hyp. Wt., g	Actual Wt., g (No. of Coins)	Hyp. Parts by Wt. Ori. Copper	Hyp. Wt. % Zn	Actual Wt. % Zn
Orichalcum							
Quadrans	160	156	2.04	$2.10 \pm 0.32(12)$	1 + 2	9.0	8.7 ± 3.3
Semis	80	92	4.1	$3.55 \pm 0.57(25)$	1 + 1.5	10.8	11.1 ± 2.4
As	40	38	8.2	$8.58 \pm 0.76(7)$	1 + 1	13.5	N.A.*
Dupondius	24	23	13.6	$14.4 \pm 1.4 (36)$	1.5 + 1	16.2	16.5 ± 0.6
Sestertius	12	12	27.2	$26.6 \pm 1.8 (77)$	2 + 1	18.0	17.4 ± 1.8
Copper							
Quadrans	112	102	2.9	$3.21 \pm 0.18(5)$	0 + 1	0.0	0.3 ± 0.6
Semis	56	48	5.8	$6.74 \pm 0.40(2)$	0 + 1	0.0	N.A.
As	28	29	11.7	$11.3 \pm 1.2 (25)$	0 + 1	0.0	N.A
Not ava	ilable.						

TABLE 6
Equivalent Weights of Copper for Neronian Orichalcum Coins

Denom.	Hyp. Wt. of Cu, g	Hyp. Wt. of Zn, g	6 × Wt. of Zn, g	٠.	Actual Wt. of Copper Coins, g
Orichalcum					
Quadrans	1.86	0.18	1.10	3.0	3.21 ± 0.18
Semis	3.66	0.44	2.66	6.3	$6.74 \pm 0.40^{\circ}$
As	7.09	1.11	6.64	13.7	11.3 ± 1.29
Dupondius	11.4	2.20	13.2	24.6	not made
Sestertius	22 .3	4.90	29.4	51.7	not made

^{*} Average weight of only two coins.



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THE NOME COINS OF ALEXANDRIA, ANOTHER LOOK

(PLATE 20)

JENNIFER A. SHERIDAN

"Nome" coins, distinguished from the rest of Romano-Egyptian coinage by their reverse legends and types representative of the nomes and cities of Egypt, were last studied in 1932 by J. G. Milne. Although Milne was correct in treating the nome coins as an integral part of the mainstream of Alexandrian bronze (which he did, unlike others who have separated them, in the catalogue of the collection at the Ashmolean), he was wrong in writing them off as not worthy of further study. These coins are not only, as Milne stated, of interest to the student of types, but are fascinating in their hellenized representation of Egyptian

- ¹ "Nome" coins is a convenient misnomer, since the coins represent not only nomes but also poleis and other administrative entities.
- ² J. G. Milne, "The Nome Coins of Egypt," Ancient Egypt 1932, pp. 73–78. Previous scholarship centered primarily on the question of the reason for the issuing of the coinage: S. Birch, "Researches Relative to the Connection of the Deities Represented upon the Coins of Egyptian Nomes with the Egyptian Pantheon," NC 1839–40, pp. 86–107; G. Dattari, "Appunti di Numismatica Alessandrina VIII—Monete dei Nomi, Astronomiche ed altre Commemorative," RIN 1901, pp. 157–83, and "Tre differenti teorie sull'origine delle monete dei nomos dell'antico Egitto," JIAN 1904, pp. 177–202; E. D. J. Dutilh, "Notes sur les médailles des nomes de l'Égypte romaine," RBN 1903, pp. 5–20, 127–44; W. Froehner, "Le nome sur les monnaies d'Égypte," Annuaire de numismatique et d'archeologie 14 (1890), pp. 272–97; A. Parazzoli, "Essai sur l'origine des monnaies des nomes d'Égypte," RN 1901, pp. 167–73.



motifs and, in addition, are an extremely useful tool to the student of the topography of Roman Egypt in the second century A.D.

Nome coins were first issued under Domitian in the Alexandrian year 11 (91-92 A.D.). The first series of nome coins was issued sporadically under Trajan in the Alexandrian years 12-15 and 20 and under Hadrian in very limited quantities in years 6-8. The early series was marked by the use of a single large denomination (the hemidrachm under Domitian, drachms under the other emperors) with various deities as reverse types. This usage was continued by Antoninus Pius and Marcus Aurelius in Pius's Alexandrian year 8. In Hadrian's year 11 (126–27 A.D.), coincident with a sharp increase in the number of types issued at the Alexandria mint, a new series of nome coins, consisting of two smaller denominations, was issued. The reverse types of these coins follow, with few exceptions, a set pattern. The obols have as a reverse type a standing figure who holds either one or two attributes. One attribute is always a symbol of the nome, such as the sacred animal or hieroglyphic symbol for that nome; the second, when present, is an elongated object such as a spear, staff, or agricultural tool. The nome symbol is used as a reverse type on the dichalkon.

The mint from which these coins were issued can finally be determined here. The notion that the nome coins may have been struck in the capital of each nome had been abandoned by the time of Milne. Milne thought it likely that the coins were minted at Alexandria, first, because they so resembled Alexandrian coins in style and fabric, and, second, because the administration for most of Egypt was centered in Alexandria.³

It is now possible to demonstrate that the coins were struck at a single mint and that the mint was Alexandria. According to the pattern of reverse types, with obol reverse figure holding the nome symbol (Plate 20, 1), the dichalkon type for the Phtheneotite nome should be two hawks, and there is a dichalkon of this type (Plate 20, 2). In addition, there is a dichalkon with the type of Harpokrates sitting on a lotus (Plate 20, 3). This type is identical to the dichalkon type of the Phthemphutite nome (Plate 20, 4), for which it is the proper type. Close

³ Milne, p. 73.



examination of one such Phthemphutite coin at the ANS shows that the second coin is in fact struck from a recut die of the first. An additional ligature has been added to the N to make it a M, and the lower ligatures of the E have been closed and a vertical stroke added to make the E a Φ . An explanation is easily found in the two words with such similar, unusual consonant clusters. A die with a seated Harpokrates for the Phthemphutite nome, accidentally engraved with the legend for the Phtheneotite nome, was recut so as not to waste a die. Clearly then, the nome coins were all struck at the same mint.

The common origin of two nomes' coins suggests that Alexandria was the mint for the whole series, and that hypothesis is reinforced by a previously unnoticed die link between a standard Alexandrian obol (Plate 20, 6) and one of the Arsinoite nome (Plate 20, 7).

Both the recut dies and the die link emerged from a preliminary study of a small sample of the material, and no doubt further examination will clarify the picture.⁵ In the meantime the nome coins are best seen as an integral part of the Alexandrian coinage, whose rationale may be obscure but which are articulate evidence for the history of Roman Egypt's nomes and cities, if anything the more authoritative because they emanate from Alexandria.

- In fact, the legend for the Phthemphutite nome seems to have been particularly problematic for the die engravers. An obol of this nome belonging to John Aiello (Plate 20, 5) also shows a recut and/or blundered legend. Instead of the proper ΦΘΕΜΦ, the legend reads ΦΘΕΝΦ and the final Φ appears, like the above recut die, to have an additional letter beneath it. This legend too may have originally been cut as ΦΘΕΝΕ. It is also possible that this legend is a recut of a totally different legend—ΘΙΝΙ. The initial Φ could have been added, the first I turned into an E (since the E is squared off, instead of its usual rounded form, this is quite possible), and the final I turned into Φ. As obols of the Thinite nome are rather rare, this theory has not yet been tested.
- ⁵ As I am currently engaged in a die and type study, I would appreciate hearing from anyone with a significant collection of nome coins. I would like to express my gratitude to William Metcalf of the American Numismatic Society and Ian Carradice of the British Museum for their assistance in the preparation of this article, and to John Aiello for the use of his collection of nome coins.



KEY TO ILLUSTRATIONS

- Obv. Bust of Hadrian laureate r., AYT KAI TPAI AΔPIA CEB
 Rev. Nude youth standing facing, head l., holding hawk in each
 hand, ΦΘΕΝΕΘΟΥ LIA
 SNGCop 1138, Æ obol, 4.36 (cf. Dattari 6352; BMCAlex 49)
- 2. Obv. Bust of Hadrian laureat r.

 Rev. Two hawks confronted, **ODENE LIA**SNGCop 1140, Æ dichalkon, 2.13 (cf. BMCAlex 50)
- 3. Obv. Bust of Hadrian laureate r.

 Rev. Harpokrates seated on lotus, Φ€€N€ LIA

 SNGCop 1139, Æ dichalkon, 1.48 (cf. Dattari 6353)
- Obv. Bust of Hadrian laureate r.
 Rev. Harpokrates seated on lotus, ΦΘΕΜΦ LIA
 ANS 1944.100.58212, Æ dichalkon, 1.01 (cf. Milne 1242; BMCAlex
 48)
- Obv. Bust of Hadrian laureate r., AYT KAI TPAI AΔPIA CEB
 Rev. Isis standing facing, head l., holding in l. Harpokrates on
 lotus, ΦΘΕΝΦ LIA
 J. Aiello, Æ obol, 4.96 (cf. Dattari 6350, 6351; BMCAlex 47; ANS
 1944.100.58209)
- Obv. Bust of Hadrian laureate r., AYT KAI TPAI AΔPIA CEB Rev. Two cornucopiae, LIA ANS 1974.26.3316, Æ obol, 5.32 (cf. Dattari 1915; Milne 1236)
- Obv. Bust of Hadrian laureate r., AYT KAI TPAI AΔPIA CEB
 Rev. Head of Egyptian king r., APCI NOI LIA
 ANS 1974.26.3446, Æ obol, 4.86 (cf. Dattari 6211; SNGCop 1084;
 BMCAlex 71)
 - 6 G. Dattari, Numi Alexandrini (Cairo, 1901), hereafter Dattari.
 - ⁷ J. G. Milne, Catalogue of Alexandrian Coins (Oxford, 1933), hereafter Milne.



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A NEW SOLIDUS OF JULIAN CAESAR

(PLATE 20)

JACQUELINE LONG

The American Numismatic Society acquired in 1979 from the bequest of Arthur J. Fecht a solidus (Plate 20, 1).

- Obv. D N IVLIANV-S NOB CAVS [sic], bareheaded bust r., draped and cuirassed
- Rev. GLORIA-REI-PVBLICAE, exergue CONS; to 1. Roma facing, enthroned, wearing helmet; to r., Constantinopolis 1., enthroned, wearing mural crown with prow at feet; holding between them shield with star

ANS 1980.109.196, 4.27 g, †

This coin is the first known Constantinopolitan issue in a precious metal for Julian as Caesar. As such, it poses certain questions: first its authenticity, then its date and significance.

The obverse legend with CAES is found on no other coins of Constantinople; but it is the only legend used, with the same break, on parallel issues of Antioch (same legends and types, *RIC* 8: 163, 164, 166, 167, 169, 171). Certain obverse dies of these issues also exhibit the same error in the inscription.¹ Though CAVS for CAES is a gross error by the engraver, it could have occurred in an Eastern mint.

¹ All from the mint of Antioch: 1. G. Mazzini, *Monete Imperiali Romane*, vol. 5, p. 209, Cohen 23 v./a, pl. 56 = Sternberg, 24 Nov. 1977, 1108, 4.24 g = Münz. u. Med., 19-20 June 1975, 781 = Glendining, 3 Dec. 1929, 586 (R. Ratto, 9 Oct. 1934, 1186, is either a more worn die duplicate or a bad cast of the same coin); 2. San



Antioch and Constantinople also share two issues of Constantius with the same reverse type.

Obv. FL IVL CONSTAN-TIVS PERP AVG, facing bust, cuirassed, wearing crested and diademed helmet, carrying spear and shield

Rev. GLORIA-REI-PVBLICAE, same type, shield inscribed VOT/XXX/MVLT/XXXX

Antioch, RIC 8: 162, 165, 168, 170; Constantinople, RIC 8: 95, 96

Obv. D N CONSTAN-TIVS P F AVG, diademed head r.

Rev. GLORIA-REI-PVBLICAE, same type, shield inscribed VOT XXXX

Antioch, RIC 8: 172, 173; Constantinople, RIC 8: 129

The new solidus fills out the Antiochene triad at Constantinople. At Antioch, Julian's coins and Constantius's with facing bust share mint marks, and Constantius's coins with head right form a separate series; at Constantinople, the same mint mark is used on Julian's solidus, both of Constantius's varieties, and an issue of Gallus, Julian's elder brother and predecessor as Caesar.²

The coin's style is very fine. The portrait particularly suits Constantinople: a VIRTVS EXERCITVS miliarensis of Constantius, for example, even suggests the same hand (Plate 20, 2; RIC 8, 100). In both cases, the upturned eye is rendered in two nested arcs about the pupil and set into a fleshy cheek. The ear is relatively large, with internal detailing. The fluffy curls at the neck and line of curled locks along the brow are the same. The profiles are very similar: the slightly convex forehead is distinguished from a long, straight, slightly pendulous nose, the upper

Giorgi, 15-22 Apr. 1907 (Strozzi), 1969; 3. Stack's, 14-15 June 1971, 29, 4.37 g; 4. Münz. u. Med., 12-13 Nov. 1970, 485, 4.48 g = Hess, 22 May 1935 (Trau), 4346, obv. die of 3. Cohen, vol. 8, 24, lists from the "ancien catalogue" a GLORIA REI PVBLICAE solidus with star on shield, exergue CONS, obverse legend D N IVLIANVS NOB C AVG [sic]. I thank J. P. C. Kent for setting me on the trail of the Antiochene errors.

I am grateful to all the ANS staff, and particularly to Chief Curator William E. Metcalf, for their assistance with this article.

² Gallus's coin has the same types as the new solidus, except the shield is inscribed VOT V MVLT X, RIC 8: 97.



lip is relatively long, the mouth slightly compressed and curved downward, the chin rounded. The fleshy face and puffy hair that seems to curl about a nonexistent diadem are common for Constantinopolitan portraits of Gallus; bronzes of Julian often represent him with a leaner face and straighter hair.

The gold content falls within an acceptable range for solidi of the mint of Constantinople from the reigns of Constantius II and Julian.⁸ The new solidus is coin 11.

SPECIFIC GRAVITY TRIALS

Emperor-RIC		ANS Coin	Trial 1	Trial 2	? Trial 3	Average	Percent Gold
1	C-55	1967.153.69	18.7	18.8	18.8	18.8	96.7
2	C-57	1956.184.15	18.9	19.0	19.1	19.0	97.9
34	C-not	1977.158.936	17.3	17.6	17.5	17.5	87.5
4	C-96	1944.100.23736	18.8	18.8	18.8	18.8	96.7
5	C-96	1967.153.68	18.8	18.8	18.8	18.8	96.7
65	C-96	1974.26.236	19.1	19.4	19.2	19.2	99.3
7	C-96	1980.109.190	18.8	19.0	19.0	18.9	97.3
8	C-96 var.	1977.158.937	18.2	18.2	18.2	18.2	92.6
9	C-96 var.	1977.158.938	18.5	18.5	18.6	18.5	94.6
106	C-98	1977.158.935	18.5	18.6	18.5	18.6	95.3
11	J CAVS-not	1980.109.196	18.5	18.5	18.5	18.5	94.6
12	J AVG-156	1977.158.939	18.7	18.9	18.8	18.8	96.7

Coins 3 and 6 are exceptional. The remainder of the sample is distributed evenly about a mean specific gravity of 18.7 (96.0 percent gold if

- ³ The smallness of the sample makes this test suggestive rather than definitive. C. Morrisson et al., L'or monnayé 1, CEB 2 (1985), analyzed three Constantinopolitan coins of Constantius (pp. 85 and 99, 113–15). One, 76.94 percent gold, is obviously irregular; the others are 96.69 and 97.08 percent gold, and silver is the major impurity. The authors' average figure for coins of the Constantinian dynasty after 346 (including Magnentius and Decentius, 17 coins in all, from various mints) is 95.18 percent gold (p. 88).
- 4 The coin is pierced with a small hole. Great care was taken to make sure that no air bubble adhered, but the specific gravity remained low.
- ⁵ An enamel number is painted on, presumably elevating the specific gravity; the coin itself probably falls within normal range.
 - The surface is pitted near the edges.



silver is the only significant impurity), median and mode 18.8 (96.7 percent).

The error in the legend of the new solidus is not a significant obstacle to its authenticity. On the other hand, the coin's fineness is unexceptionable and its style characteristically Constantinopolitan. It is best taken as genuine. It completes for Constantinople the group of GLORIA REI PVBLICAE issues more plentifully attested by the parallel group of Antioch.

A third parallel group is found at Rome and may be dated closely. The same reverse type as the GLORIA REI PVBLICAE solidi appears on solidi of Julian with the legend FEL TEMP-RE-PARATIO and star on shield and on solidi of Constantius with facing bust and reverse legends GLORIA REI PVBLICAE VOT XXX MVLT XXXX (RIC 8: 289-91, 293), GLORIA REI PVBLICAE FELICITER V (RIC 8: 294), and FELICITAS ROMANORVM VOT XXXV MVLT XXXX (RIC 8: 296-98). At least some solidi of all the varieties share the mint mark RSM-[officina]-., a close chronological connection (RIC 8: 293-98). It is the only mint mark used on the last two varieties. Constantius's GLORIA REI PVBLICAE VOT XXX MVLT XXXX were issued longest, through four mint marks; they share with Julian's solidi also *-RSM-[officinal]-(RIC 8:291-92). The other two varieties in their unique legends⁸ combine with clear references to a quinquennial celebration, specifically the thirty-fifth anniversary, the same theme of "happiness" as Julian's reverse and a 1½ solidus multiple of Constantius, FELIX ADVENTVS AVG N (RIC 8: 287-88). The multiple obviously celebrates one of the most splendidly impressive occasions of late antique pageantry, Constantius's entry into Rome for a month's visit at the end of April 357.9 The Consularia Constantinopolitana and Chronicon Paschale report that



⁷ Obverse D N CL IVL-IANVS N C, bareheaded bust right wearing plain cuirass, *RIC* 8: 292, 295; like the reverse legend with this type, the obverse legend and portrait style are unique to Rome.

⁸ See Type/Legend index, RIC 8, p. 585.

Amm. Marc. 16.10; R. MacMullen, "Some Pictures in Ammianus Marcellus," Art Bulletin 46 (1964), 435–55. Ammianus 16.10.20 says Constantius left Rome on 29 May, the thirtieth day after his arrival, i.e. 30 April. The Consularia Constantinopolitana says he arrived on 28 April and does not say how long he stayed (Chron. Min. 1.239); the Chron. Pasch. does not give dates, but says the visit lasted 14 days.

during its course Constantius celebrated his vicennalia. The reckoning would be correct for the year if taken from Constantius's elevation to the rank of Augustus on 9 September 337; but imperial anniversaries are properly calculated from the emperor's dies imperii, even if he had been named merely Caesar. For example, although he himself now claimed the rank of Augustus, in 360 Julian celebrated his quinquennalia, five years from when Constantius had named him Caesar. 10 April-May 357 falls a year early and in the wrong month for the theoretical reckoning of Constantius's thirty-fifth anniversary, 11 but by the fourth century Roman emperors seldom managed to visit Rome. The occasion was not to be missed. Constantius advanced his count to meet it. His coincidental vicennium as Augustus doubtless swelled the glory of his panegyrists' themes and explains the chroniclers' confusion. Vicennalia is an easier word and commoner anniversary than septima quinquennalia. The coins confirm that Constantius' thirty-fifth anniversary was celebrated amidst the happiness of his visit.12 Though the longest issued GLORIA REI PVBLICAE VOT XXX MVLT XXXX seem to refer to Constantius's tricennalia, the vota apply to a seventh quinquennalia also: decennia always receive the main attention of late antique vola legends, and both thirtieth and thirty-fifth anniversaries look forward



Nomination as Caesar, 6 November 355: Amm. Marc. 15.8.17, Socr. HE 2.34, Chron. Min. 1.238, CIL 1,1*.277. Usurpation, probably February 360: see discussion of G. W. Bowersock, Julian the Apostate (London, 1978), pp. 46–52. Quinquennalia, winter (presumably 6 November) 360: Amm. Marc. 21.1.4, quinquennalia Augustus iam edidit. For other examples of imperial anniversaries being calculated from the initial elevation, see T. D. Barnes, "Synesiurs in Constantinople," GRBS 27 (1986), pp. 105–6, nn. 43–44, and The New Empire of Diocletian and Constantine (Cambridge, MA, 1982) pp. 3–8, particularly n. 14. Celebrations took place at the beginning or end of the anniversary year variably. Constantine I even celebrated his quinquennalia and vicennalia at both times: Barnes, New Empire, p. 70, n. 107, and pp. 226–37, establishes the date of Pan. Lat. 5[8].13.1–2 on grounds of the census to which it alludes; for the vicennalia, Hieron. Chron. 231°; Chron. Min. 1.232.

¹¹ Constantine I named him Caesar on 8 November 324: CIL 1,1².276; Chron. Min. 1.232; L'Année épigraphique 1937.119.24 (though natale idibus Nob.); Amm. Marc. 14.5.1 (though diem sextum idus Octobres).

¹² Asserted correctly but without explanation by J. P. C. Kent, "An Introduction to the Coinage of Julian the Apostate (A.D. 360–63)," NC 1959, p. 116, n. 2.

to the same fortieth.¹³ At least the solidi marked RSM-[officina]-* must have been issued with the FELIX ADVENTVS AVG N multiple immediately on the emperor's arrival. The others cannot have been long remote.

This precise date of April-May 357 suggests why a star might replace vota numbers. Such stars are found only for Caesars, before their first quinquennalia. Julian had been Caesar only one and a half years when the Rome solidi were issued; he did not celebrate his quinquennalia until 360. Admittedly, considerable laxity obtained in the reference of vota legends to actual celebrations. Four issues, distinguished by mint mark, of GLORIA REI PVBLICAE VOTIS V solidi for Julian Caesar at Arles (RIC 8: 233A, 235, 237, 239) antedate his quinquennalia by at least nine months. Since the issues are associated with GLORIA REI PVBLICAE VOT XXX MVLT XXXX solidi for Constantius, they probably began even earlier. Both Julian's and Constantius's varieties are continued into Julian's usurpation when Arles titled him Augustus and, as Kent suggests, the variant with VOT *V* MVLT X on the shield marks his quinquennalia specifically (RIC 8: 280-87; p. 201). By then Constantius's thirty-fifth anniversary celebration was three and a half years past. Julian's GLORIA REI PVBLICAE VOT V MVLT X as Caesar at Thessalonica (RIC 8:194, 197) doubtless began during Constantius's residence at Sirmium from autumn 357 to autumn 359, like the Arles group anticipating Julian's quinquennial year. 14 But in the case of the earlier Rome solidi, VOT V MVLT X three and a half years early apparently seemed premature. In the desire to associate the Caesar in the Augustus's anniversary issue, an alternative presentation was utilized.

The same argument urges an early date for Julian's GLORIA REI PVBLICAE solidi with star on shield at Antioch and Constantinople. Presumably, Thessalonica issued GLORIA REI PVBLICAE solidi for



¹⁸ The legends normally have their upper limit divisible by ten from both even-ten and odd-five *vota perfecta*; thus for example VOT XXX MVLT XXXX or VOT XXXV MVLT XXXX, but rarely VOT X MVLT XV and never VOT XXXV MVLT XXXXV (see indices of *RIC* 6, 7, and 8).

¹⁴ For the dates, see references in O. Seeck, Regesten der Kaiser und Päpste (Stuttgart, 1919; rpt., 1964), pp. 204-7, though the postconsulate of Cod. Theod. 8.5.10 refers to its receipt, the date and location to its giving: see R. S. Bagnall et al., Consuls of the Later Roman Empire (Atlanta, 1987), pp. 80-81.

Julian with VOT V MVLT X rather than a star because the quinquennalia might now reasonably be anticipated. The latest date for inception of an issue with the star probably falls within 358. Constantius himself did not reside at Antioch until retiring to winter quarters there in 360/1 (Amm. Marc. 20.11.32), but his absence does not preclude an early date. As the easternmost Roman mint, Antioch was always the main supplier of coin for operations looking toward Persia. Constantius sent both ambassadors and generals there while he was in the West. Constantinople did not have the same consistently large output in the precious metals, but did periodically help supply the East. Kent places the bulk of its GLORIA REI PVBLICAE issues, in Constantius's name, during Constantius residence in the city in 359-60 (RIC 8, p. 444), but they could have started earlier. Julian's proclamation as Caesar may have occasioned a special issue. 15 The smaller volume of the Constantinopolitan issue makes it appear less likely than the Antiochene to have been extended long beyond its immediate occasion. The resemblance of the new coin's portrait to Constantinopolitan portraits of Gallus also accords with a relatively early date: say, winter 355/6.

Julian had been only a student before his elevation, but as Constantius's cousin he could at least represent the Constantinian house at the

15 Nicomedia's unreduced siliqua of Julian Caesar, reverse VOTIS V in wreath, apparently had that occasion, as Kent suggests (RIC 8: 102A; p. 468). It certainly antedates the reduction in standard that took place during Constantius's Pannonian campaigns. Sirmium continued for Constantius the reverse VOTIS XXX MVLTIS XXXX in wreath from unreduced to reduced siliquae, coins of both groups being relatively common (RIC 8: 66, 68). The terminus post quem of the reform is provided by Aquileia's unreduced siliquae of Constantius with reverse VOTIS XXXV MVLTIS XXXX in wreath (RIC 8:211; J.-P. Callu, Imperial Revenue, Expenditure and Monetary Policy in the Fourth Century A.D., ed. C. E. King [Oxford, 1980], pp. 175-253, n. 103): in view of the mint's current inactivity in precious metals (its solidi GLORIA REI PVBLICAE VOT XXXV MVLT XXXX, RIC 8: 210, coincide with the siliquae), these coins can hardly have been issued after Constantius departed Italy, soon after his anniversary celebrations in Rome. Against Seeck's redated laws fixing Constantius longer in Italy (above, n. 14, p. 204), compare Amm. Marc. 16.10.20, iter festinavit; Julian's disparaging charge that in the season of his own victory at Strasbourg, Constantius "just travelled about and had friendly meetings with the Danubian tribes" (ἐκείνου δὲ όδεύσαντος μόνον καὶ φιλίως έντυχόντος τοῖς παροικοῦσι τὸν "Ιστρον ἔθνεσιν, Ath. 279D), corroborates Ammianus and suggests that Constantius campaigned from the first.



site of the most recent rebellion.¹⁶ Julian interpreted his role as unfavorably as he could in trying to justify his usurpation of the prestige of Augustus. In the one of his propaganda letters that survives, he complains that Constantius treated him as a figurehead.¹⁷ But Constantius's issues for Julian, including the new solidus from the mint of the eastern capital, notified the whole empire of his dynastic plans. They were entirely regular in their conception and advertisement. Constantius might have expected better gratitude from his subordinate.

¹⁶ Silvanus's, ended by his assassination a month before Julian's elevation: Amm. Marc. 155-6

¹⁷ He exclaims, "Indeed [Constantius] had even said and written that he was not giving the Gauls a ruler, but one who would bring his own image before them" (καὶ γάρ τοι καὶ τοῦτο εἴρητο καὶ ἐγέγραπτο, ὅτι τοῖς Γάλλοις οὐ βασιλέα δίδωσιν, ἀλλὰ τὸν τὴν ἑαυτοῦ πρὸς ἐκείνους εἰκόνα κομιοῦντα, Ath. 278A).

THE UMAYYAD NORTH: NUMISMATIC EVIDENCE FOR FRONTIER ADMINISTRATION

(PLATE 21)

DENISE A. SPELLBERG

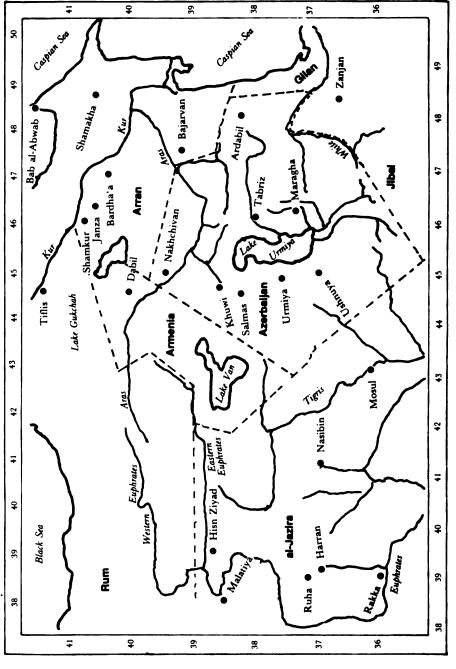
The early history of the northern frontier of the Umayyad caliphate presents a variety of problems to the analyst, not the least of which is an absence of eighth century A.D. geographical accounts of the region. Fortunately, the lack of written sources for this period may be supplemented by the existence of numerous Umayyad dirhams.¹ In this period the Umayyad north included the provinces of al-Jazīra, Armenia, Arrān, and Azerbaijan. Michael Morony has noted that the administration of al-Jazīra and al-Mawṣil was linked together with Armenia and Azerbaijan under a single governor,² who fulfilled the dual role of a military and administrative leader. Maslama b. 'Abd al-Malik was appointed governor of Armenia in A.H. 91/A.D. 709–10, a position which he retained until A.H. 99. During this time he was compelled to defend two frontiers, on the north and west, in addition to minting dirhams to pay his troops. This article examines the years in which this



¹ I am grateful to Professor Richard Bulliet for his comments and to Dr. Helen Brown of the Ashmolean Museum who was generous with both her time and advice. I also thank Dr. Michael Bates for his consistent support and insightful suggestions. This article resulted from a summer of study in the American Numismatic Society Graduate Seminar program without which I could not have started this project, nor begun to appreciate the interaction of numismatics and history.

² M. G. Morony, Irag after the Muslim Conquest (Princeton, 1984), pp. 135-36.

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THE UMAYYAD FRONTIER

governor's movements, traced from documentary evidence, appear to conflict with numismatic data from the frontier town of Janza.

This frontier town is now the Russian city of Kirovobad. During the Umayyad caliphate, Janza was located in the province of Arrān. The site currently has six Umayyad dirhams attributed to it. Of the six, one dates from A.H. 92 and the remaining five all date from A.H. 94. George Miles read the mint name on the reverse of one of these A.H. 94 dirhams as al-Janza,³ although the dirham is double struck on the reverse and the beginning of the place name is blurred (Plate 21, 1). However, another such dirham, in the Ashmolean Museum at Oxford, reveals that the mint name should be read as bi-Janza, "in Janza," rather than al-Janza (Plate 21, 2). Two other examples of the A.H. 94 Janza dirhams, described by the Soviet scholar E. A. Pakhomov,⁴ and a third, recently found and now privately owned, also confirm this reading (Plate 21, 3) as does the sole A.H. 92 Janza specimen, also privately owned (Plate 21, 4). These six rare coins call into question the accuracy of the extant written sources.

Janza as a geographic and historical location is not mentioned by early Arab geographers such as Ya'qūbī (d. A.H. 289) and Ibn Khurradādhbih (d. A.H. 300). Medieval geographers and historians who do mention the founding of Janza offer a variety of dates. Al-Iṣṭakhrī (d. A.H. 340), for example, refers to Janza as a small town between Tiflīs and Bardha'a. According to a much later source, the seventeenth century A.D. Ta'rīkh Bāb al-Abwāb of Müneccim Başı (d. A.D. 1702), Janza was founded in A.H. 245, over a century after the numismatic evidence for its existence. This statement was accepted by Wilhelm Barthold, who was unaware of the numismatic evidence.

- ³ G. C. Miles, Rare Islamic Coins, ANSNNM 118 (1950), p. 23.
- ⁴ E. A. Pakhomov, Monetnie klady Azerbaizhana (Baku, 1959), p. 46.
- ⁵ Al-Ṭabarī (d. A.H. 310) provides an exceptionally early reference to a "Janza" in a section of poetry listed under the year A.H. 64. However, there is no contextual evidence that the reference is to a toponym representing the mint site under discussion in this article. Abū Ja'far al-Ṭabarī, Ta'rīkh ar-rasūl wa'l-mulūk, ed. M. J. de Goeje (Leiden, 1885), vol. 2, pt. 1, p. 448.
- Abū Isḥāq al-Farisī al-Iṣṭakhrī, Kitāb al-masālik wa'l-mamālik, ed. M. J. de Goeje (Leiden, 1927), pp. 187, 193.
- ⁷ Ahmet b. Lutfullah Müneccim Başı, A History of Sharvan and Darband, trans. V. Minorsky (Cambridge, Eng., 1958), pp. 25, 57.
 - ⁸ Wilhelm Barthold, "Gandja," The Encyclopaedia of Islam, 1965 ed.



The Armenian chronicler Movses Dasxurançi recorded that Janza had first been located in Azerbaijan, and a new site bearing the same name was later established in the Armenian province of Arkakaşen or Arrān. In this account the name Janza is explained as a derivative from the Ganjak/Ganzag of the Sasanians, the site of Ganzaka which had been the pre-Islamic capital of Azerbaijan. The term ganzaka and its Pahlavi (Middle Iranian) forms ganjak or ganzag meant "treasury." Wilhelm Eilers suggests that the Arabic root KNZ, "to hoard or bury treasure," proves the existence of a "post-Achaemenian but pre-Islamic borrowing from Iranian languages," all very suggestive in regard to the mint of Janza.

There are accounts of the Byzantine emperor Heraclius burning the Azerbaijanian Ganjak of the Sasanian period during his campaign to recover the True Cross from the Sasanians.¹³ This Ganjak, located near lake Urmiya and the town of Shiz, is known from Byzantine and Islamic sources to have been the site of one of the three highest Zoroastrian holy fires, Adur Gushnasp, the fire of warriors. However, the Sasanian Ganjak which was both a religious sanctuary and a palace complex is not listed by Robert Göbl or Malek Mochiri as a mint site for either the Sasanian or early Umayyad periods.¹⁴ The absence of Sasanian and Arab-Sasanian numismatic evidence from the Ganjak located in Azerbaijan strongly suggests that this was not a pre-Islamic mint site which carried over into the Umayyad period.

The final, and perhaps most puzzling, account of Janza is provided by Hamd Allah Mustawff, a fourteenth century A.D. writer who states that



[•] Movses Dasxurançi, The History of the Caucasian Albanians, trans. C. F. Dowsett (New York, 1971), p. 35.

¹⁰ Dasxuranci, p. 79.

¹¹ See D. N. MacKenzie, A Concise Pahlavi Dictionary (London, 1971), p. 35; and H. S. Nyberg, A Manual of Pahlavi (Wiesbaden, 1974), pt. 2, p. 81.

¹² W. Eilers, "Iran and Mesopotamia," *The Cambridge History of Iran*, vol. 3, ed. E. Yarshater (Cambridge, Eng., 1983), p. 496.

¹³ N. Garsoïan, "Byzantium and the Sasanians," *Cambridge History* (above, n. 12), p. 592.

¹⁴ R. Göbl, Sasanian Numismatics (Brunswick, 1971), table 16; M. I. Mochiri, Étude numismatique iranienne sous les Sasanides (Tehran, 1983), vol. 2, p. 462.

Janza was founded in A.H. 39.16 Thus, the only documentary evidence which supports the numismatic evidence is several centuries later than the A.H. 92 and 94 Janza dirhams. Why then does the name Janza appear on Umayyad dirhams at such an early date?

Cities of the Umayyad north which provide somewhat erratic numismatic evidence for the administrative unity of the region include al-Mawṣil, Ḥarrān, Dabīl, Tiflīs, al-Bāb, and Janza. Dabīl, the administrative center of Armenia, served as the governor's residence and is attested as a mint for this period; but coins struck with the name of the province were also produced. In contrast, the province of Azerbaijan appears as a mint on dirhams, but its administrative capital Ardabil does not. Bardha'a, the most important city in the province of Arrān and the site of the provincial treasury in Umayyad times, never appears on coinage; instead Janza, on the Bardha'a-Tiflīs road, is attested on the Umayyad dirhams of A.H. 92 and 94.

The provincial governor was caught in the stress and strain felt along the western and northeastern borders of this frontier region. His movements did not always coincide with the striking of dirhams, but instead followed his principal role as a military commander. During the years A.H. 91–95 which surround the minting of the Janza dirhams Maslama b. 'Abd al-Malik governed the Umayyad north. Although Maslama was a veteran military commander and the son of the second Marwānid caliph, he was never considered as a possible successor to the Umayyad throne because his mother had been a slave.

The primary focus of military action in the Umayyad north in this period was the western border with the Byzantine empire. Armenia and Syria served as launching points for yearly raids from A.H. 91–95.¹⁷ There is documentary evidence of Maslama's participation in campaigns against Byzantium only for the years A.H. 92 and 93.¹⁸ It is therefore



¹⁵ Ḥamd Allāh Mustawsī, Nuzhat al-qulūb, trans. G. Le Strange (Leiden, 1919), pp. 93, 173, 194.

¹⁶ G. Le Strange, The Lands of the Eastern Caliphate (London, 1930), pp. 177-78.

¹⁷ Al-Ṭabari (above, n. 5), vol. 2, pt. 2, pp. 1217–69; Aḥmad b. Abī Ya'qūb Ya'qūbī, *Ta'rīkh* (Beirut, 1960), vol. 2, pp. 283–300; 'Izz al-Dīn b. al-Athīr, *Al-kāmil fī al-la'rākh* (Beirut, 1965), vol. 4, pp. 555–78.

¹⁸ For the year A.H. 92 see al-Tabari (above, n. 5), vol. 2, pt. 2, pp. 1235-36; Ibn al-Athir (above n. 17), vol. 4, p. 556. For the year A.H. 93 see Ibn al-Athir, vol. 4, p. 578; Al-Tabari does not mention Maslama on the Byzantine frontier in this year.

possible that the A.H. 92 Janza dirhams were not minted under his supervision. Leadership for the raids against Byzantium during the years A.H. 93, 94, and 95 is dominated by al-'Abbās b. Walīd. The consistent mention of this commander's presence on the western side of the Umayyad north confirms that Maslama was probably not the sole commander on the western side of the frontier, a flexibility which made his excursions against the Khazars in the east possible.

Textual sources confirm Maslama's presence on the eastern edges of the Umayyad north, specifically at the city of al-Bāb in A.H. 91 and 95.19 A fortress outpost on the edge of the Caspian Sea, al-Bāb was used most frequently for raids against the Khazars, a Turkic group who made vigilant defense of this part of the Umayyad empire a necessity. Thus, Maslama's activities as a military commander can be accounted for during the years A.H. 91, 92, 93, and 95. Sources for A.H. 94 are silent in regard to the governor's military activities and to political events in Arrān and Azerbaijan; however, both al-Tabarī and Yaʿqūbī state that the commander performed the hajj in that year.20

This brief sketch of the Umayyad north and the governor's movements would remain incomplete if it were based solely on the literary sources. However, given the governor's responsibility for the process of minting dirhams and especially for payment of the troops, numismatic evidence from the Umayyad north helps fill the lacunae in literary references and resolves the conflicting dates of Janza's founding.

In the year A.H. 91, Arran appears on dirhams at the time when Maslama was first sent by the Caliph al-Walid to the fortress of al-Bāb. Earlier dirhams from Arran dating to the latter half of the 80s A.H. parallel the presence of the previous governor Muḥammad b. Marwan at al-Bāb. When Maslama moved west to the Byzantine frontier in A.H. 92 coins with Armenia were minted. In this instance, there is a direct correlation between the governor's movements, military requirements, and the production of coinage.



¹⁹ For the year A.H. 91 see al-Tabarī (above, n. 5), vol. 2, pt. 2, p. 1217; and Ibn al-Athīr (above, n. 17), vol. 4, p. 555. For the year A.H. 95 see Leone Caetani, *Cronographia Islamica* (Paris, 1912), vol. 5, p. 1160.

²⁰ Al-Țabari (above, n. 5), vol. 2, pt. 2, p. 1266; Ya'qūbī (above, n. 17), vol. 2, p. 291.

Even though Maslama stayed on the western frontier during A.H. 93, numismatic evidence for that year exists only in the form of a dirham from al-Bab (Plate 21, 5). Its appearance is puzzling not only because it would seem to contradict the hypothesis that the governor's presence at a particular mint would be necessary to strike coins, but because the al-Bab specimen does not follow the epigraphic style of Damascus adopted elsewhere in the Umayyad north (Plate 21, 6). The Damascus type has several distinct characteristics, one of which is the mim which is represented by a circle and a downstroke. Moreover, the dal a letter which demonstrates stylistic unity in the coinage of the Umayyad north, is distinctive because of its upward flourish. However, the calligraphy of this al-Bāb dirham resembles that of Wāsit (Plate 21,7) rather than that of Damascus. Coins of Wasit bear a flatter and squarer epigraphy than do those of Damascus. Further, the Wasit coins introduce the mint name with a preposition ft, whereas the Damascus examples use the preposition bi. In addition, the al-Bab A.H. 93 dirham, similar to those of Wāsit, is an isolated issue, pre-dating all other al-Bāb dirhams by 21 years. It is therefore conceivable that the single issue A.H. 93 al-Bab dirham resulted from a directive from Iraq issued by a general other than Maslama.

The appearance of dirhams from three different sites in the Umayyad north—al-Jazīra, Armenia, and Janza—the following year, A.H. 94, suggests the possibility of a westward movement of dies together with the person in charge of them. To prove this supposition, there would have to be at least stylistic similarity between the al-Bāb example of A.H. 93 and the al-Jazīra (Plate 21, 8), Armenia (Plate 21, 9), and Janza examples of A.H. 94, if not die linkage. However, an examination of the coins indicates that the Damascus epigraphic prototype continued to predominate in the Umayyad north after the al-Bāb exception of the year A.H. 93.

Was the production of dirhams at al-Bab in A.H. 93 therefore an action carried out in the governor's absence and prompted by the need to pay the troops? Al-Balādhurī, while describing Maslama's reconquest of al-Bāb some ten years later, emphasized an obvious conjunction between the military necessity of paying troops and the minting of coinage. Al-Balādhurī sketched Maslama in the process of distributing stipends to his garrison of twenty-four thousand men, and added that



the residents of al-Bāb "do not allow any āmil to enter unless he has money to distribute among them." Because Maslama's presence on the western frontier in A.H. 93 has been confirmed, and he was not at al-Bāb in A.H. 95, it is likely that Maslama moved eastward from the Byzantine frontier to the border of the Khazars in late A.H. 93. Since textual sources usually focus on battles, Maslama's activities for this period would not have been mentioned because he did not engage in military confrontations either with the Byzantines on the west or the Khazars in the northeast.

Janza's position on the Bardha'a-Tiflīs road made it a convenient way station when moving toward the northern front. Although Bardha'a is attested as the official treasury for the province of Arrān, the importance of Janza lies in its relation to the location of Tiflīs, the capital of Georgia. Only a single dirham from the year A.H. 85 is extant from Tiflīs during the Umayyad period. The absence of coin production at this site before A.H. 85 is due to the fact that it was controlled by the Khazars. When the Umayyads conquered Tiflīs in A.H. 85, dirhams were struck, but thereafter Umayyad control over Tiflīs was irregular, and as a result no more coins were minted.²²

It is likely that Janza was established as a possible line of defense against the Khazars in order to safeguard the treasury at Bardha'a. In this framework, Janza helps redefine the Umayyad north as a frontier against the Khazars not confined to al-Bāb in the northeast, but also focused on the area near Tiflīs which lies to the northwest of Janza and Bardha'a. Janza certainly proved a safer mint site than al-Bāb. A similar case may be made for Janza's security with regard to Tiflīs. Moreover, governors of the Umayyad north often established military fortifications with regard to strategy rather than purely administrative motives.

The Janza dirhams also help to illuminate the general administrative context of the Umayyad north. Analyzed in conjunction with other



²¹ Ahmad b. Yahyā al-Balādhurī, Fulūḥ al-Buldān (Leiden, 1866), p. 207.

²³ E. A. Pakhomov, *The Coins of Georgia*, trans. H. B. Wells (Tblisi, 1970), p. 96. Indeed Georgia always remained at least semi-independent during the Umayyad period.

dirhams from the years A.H. 91-95 and documentary evidence, the Janza specimens provide a new perspective on the role and movement of the governor in the Umayyad north. The governor emerges as a military leader who, in addition to other pressing administrative duties, often directed the striking of silver coinage to pay his troops. It is within the environment of a dual frontier under constant and shifting threats from the Byzantines to the west and the Khazars to the northeast that Janza became a numismatic, administrative, and historical entity. The Janza dirhams of A.H. 92 and 94 were the product of a military encampment or fortification perceived as conveniently close to the provincial treasury at Bardha'a, yet distant enough from Tiflīs, al-Bāb, and marauding Khazars to provide a short lived but secure site for the striking of silver.

KEY TO PLATES

- 1. Janza, A.H. 94, ANS
- 2. Janza, A.H. 94, Ashmolean
- 3. Janza, A.H. 94, private coll.
- 4. Janza, A.H. 92, private coll.
- 5. al-Bāb, A.H. 93, ANS
- 6. Damascus, A.H. 94, ANS
- 7. Wāsit, A.H. 94, ANS
- 8. al-Jazīra, A.H. 94, BM
- 9. Armenia, A.H. 94, Muḥammad abū-l-Faraj al-'Ush, Monnaies Aglabides (Damascus, 1982), pl. 37, U13



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THE MONETARY HISTORY OF CASTILE-LEON (ca. 1100–1300) IN LIGHT OF THE BOURGEY HOARD

(Plates 22-23)

JAMES J. TODESCA

Throughout his life, Archer Huntington was a fervent collector of "things Spanish." Before his establishment of the Hispanic Society of America in 1904, he had already amassed a collection of some 30,000 Spanish coins, ranging from the Visigothic period to modern times. By 1946, Huntington and the Hispanic Society had enlisted the aid of the American Numismatic Society in organizing and studying this huge, largely uncatalogued collection. In the following years, George Miles published separate monographs on the coins of the Umayyads and the Visigoths, intended as the pioneering volumes in a projected series of Spanish numismatic studies based on Huntington's coins. At the same time, the coins themselves were gradually transferred to the cabinets of the ANS, some between 1946 and 1948 and the remainder in 1957, two years after Huntington's death. Since then, his collection has remained in large part unstudied.¹

¹ J. García-Mazas, El poeta y la escultura: la España que Huntington conoció (Madrid, 1962), p. 444; G. C. Miles, The Coinage of the Umayyads of Spain (New York, 1950), The Coinage of the Visigoths, Leovogild to Achila II (New York, 1952), and Coins of the Spanish Mulūk al-Tawā'if (New York, 1954).

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Huntington kept few records of the origins of these coins. When his collection was deposited with the ANS, most of the coins could only be arranged in the ANS trays by type and arbitrarily assigned accession numbers. In recent years, however, the Hispanic Society uncovered in its archives a set of notes which appear to be from the Parisian coin dealer Bourgey and concern a hoard of Castilian billon roughly datable to the period 1250 to 1350. The notes describe, in good detail, a total of 317 coins. They delineate not only the general types but note variations between coins of the same type, usually differences in spelling, style or mint mark. A good number of the descriptions in Bourgey's notes can be matched with specific coins in the ANS trays, dispersed among a larger lot of Huntington's coins which includes other coins from Bourgey's dealership as well as some of unknown provenance. The hoard, in so far as it has been possible to reconstruct it, is catalogued below in the Appendix.

Although it now exists only in imperfect form, the significance of this hoard cannot be ignored. As described by Bourgey, the 317 pieces comprise six distinct types. By far, the most well represented (said to be 156 coins) depicts a castle on its obverse surrounded by the legend FREX CRSTELLE (Plate 23, 15–17; Heiss, pl. 5, 1–5). The reverse shows a lion encircled by the completion of the legend, ET LEGIONIS. The second most numerous type can be generically labeled a coronado. The obverse portrays a crowned bust with the legend TLFONS REX or TLFOS REX (Plate 23, 18–19; Heiss, pl. 6, 6–10). The reverse has a castle and the legend CRSTELE LEGIONIS. The notes describe 67 specimens of this coin. The third type represented was also a coronado with 62 examples noted. Its obverse shows a crowned bust with the legend STNCII REX (Plate 23, 13–14; Heiss, pl. 5, 4–14). The reverse again displays a castle and the legend CRSTELLE LEGIONIS. There were 24

Giles Carter of Eastern Michigan University conducted the X-ray fluorescence. Drs. M. González Jiménez, A. MacKay, M. Bates, and T. F. Ruiz read drafts and offered valuable advice. Dr. J. F. O'Callaghan also read and commented on drafts and was kindly supportive throughout. The coins discussed are the property of the Hispanic Society of America and are reproduced with its permission. I wish to thank the entire staff of the American Numismatic Society for their support. Above all, I am grateful to Dr. Alan Stahl of the Society for his guidance and unending patience.

² A. Heiss, Descripción general de las monedas hispano-cristianos, vol. 1 (Madrid, 1865), hereafter, Heiss.



examples of a coin which resembles the **F** REX type. On the obverse appears a castle surrounded by the legend **RL** REX CRSTELLE while the reverse has a lion and the legend **ET LEGIONIS** (Plate 23, 20–21; Heiss, pl. 6, 13–14). Both the castle and the lion, however, are framed by a square whereas on the **F** REX coins they are framed by a circle. There were five examples of a coin with the usual castle obverse and lion reverse but carrying an anonymous legend which reads **MONETA** CASTELLE on the obverse and continues **ET LEGIONIS** on the reverse (Plate 22, 9–12; Heiss, pl. 6, 4–10). The obverse type is surrounded by eight lobes while the reverse type has a similar border of seven lobes. Finally, there were three coins that typologically resemble the **MONETA** CASTELLE. They have a castle surrounded by five lobes on the obverse and a lion with five lobes on the reverse. The obverse legend reads **AL** DI GRA REX CASTEL and the reverse **AL** DI GRA REX LEGION (Plate 23, 22; Heiss not).

Overall, in its distribution of types, the hoard is remarkably similar to the other known hoards from this period. It is this commonality which makes the discovery of the Bourgey hoard important. It emphasizes that the hoards unmistakably display a very consistent pattern, a pattern that has not been adequately explained.

The failure to explain this pattern of distribution is inherently related to the absence of a firmly established chronology for the coin types in question. Based on the information provided strictly by the coins themselves, only one of these six types can be unhesitatingly identified as the issue of a particular monarch. There is only one Sancho in Iberian history who was king of both Castile and Leon. The coronados which read Sancii Rex castelle legionis must belong to Sancho IV (1284-95). According to the chronicle of Alfonso XI, composed during that king's lifetime by an informed member of the court, Alfonso XI (1312-50) issued two types of coins, "coronados" and "novenes." It seems fairly safe, then, to assign the coronado which reads alfons Rex to his reign. Likewise, the coins which read all rex castelle and all DI Gra rex share the same mint markings as the alfons rex coronados and are similar in style. These would seem to



³ "Crónica de Alfonso XI," *Biblioteca de Autores Españoles*, vol. 66 (Madrid, 1875), p. 230; this volume also contains chronicles of other rulers discussed herein.

be the corresponding novenes of that reign. Attributions of this sort were accepted by Heiss in his monumental work of the mid-nineteenth century and numismatists after him have found no reason to challenge their validity.4

The remaining two types contained in the Bourgey hoard, however, are more controversial. Along with two additional coin types not mentioned in the Bourgey notes, the proper attribution of these coins has been the subject of considerable debate. The problem can be divided into three basic components: 1) the coin which bears the legend F REX CASTELLE ET LEGIONIS could conceivably belong to either Fernando III (1230-52) or Fernando IV (1295-1312); 2) the anonymous MONETA CASTELLE ET LEGIONIS could have been issued virtually anytime after 1230; and 3) two other non-hoard types, one whose obverse carries the six line inscription ALFONSVS REX CASTELLE ET **LEGIONIS** (Plate 22, 1-4; Heiss, pl. 5, 2-3) and another that bears the legend TLF REX CASTELLE on the obverse and continues ET **LEGIONIS** on the reverse (Plate 22, 5-8; Heiss, pl. 5, 4-6), almost certainly belong to Alfonso X (1252-84), although it has not been established which was issued first. The Bourgey notes, as we have them, do not refer to either of these last two types.

Heiss' original solution to the problem was to attribute the F REX coins to the reign of Fernando III (1230–52) based on their very close typological resemblance to the TLF REX coins of Alfonso X (1252–84). He subsequently gave the MONETT CTSTELLE issues to Fernando IV (1295–1312) as documentary evidence attests that Fernando had issued coins. After Heiss's work, hoards from the period began to be published. These hoards contains none or very few of the two coins of Alfonso X described above (Plate 22, 1–4 and 5–8). It seems unlikely that hoards would consistently contain coins of Fernando III and coins issued over 30 years later but include almost none from the intervening years. In light of this, it is difficult to maintain that the F REX coins belong to the earlier period of Fernando III.



⁴ Heiss, pp. 45, 53-54,

⁸ Heiss, p. 35-36, 46-49; for a bibliography of the pertinent hoards, see D. M. Metcalf, "A Hoard of Billon of Fernando IV of Castile and Leon," *ANSMN* 18 (1972), pp. 89-93.

While he could not fully solve the problem of chronology, D. M. Metcalf asserted that the proper attribution of these types would "rest, in the last resort, on the pattern of their occurrence in the hoards." He implied that hoard patterns must take precedence over what documentary evidence or stylistic analysis may indicate. Though there is much strength in this method, especially as opposed to stylistic analysis, relying on hoard distribution while ignoring the documentary evidence is hazardous. The Gallur hoard for example contains some several thousand coins of the type TLF REX. Included in that huge number were approximately six to eight coins of the MONETA CASTELLE type for every 1,000 of the others. Regarding this disparity, Metcalf assumed, not unreasonably, that the MONETA CASTELLE were stragglers from an earlier issue. It is clear in the written sources, however, that one issue of Alfonso X was followed by a strong debasement. With this information, the Gallur hoard can be interpreted much differently. It could represent a hoard of the older, stronger coins, with a few of the new, debased issue reluctantly admitted. Obviously, the written sources must play an important role in solving the problems of Castile's monetary history.

Recognition of the importance of the documentary sources has led to the equally dangerous tendency to not keep the numismatic evidence clearly in mind. Attempts to neatly collate the array of written sources have caused several numismatists to conclude that there were issues of coins for which there are no known specimens. Such suggestions are untenable. It is very unlikely that some examples of a billon issue would not survive. The coins' intrinsic value would never have been high enough that they were all melted down. Rather than suggest



⁶ Metcalf, p. 87.

⁷ Metcalf, pp. 92-93. The Gallur hoard was reported by Pio Beltrán Villagrasa, "La gran dobla de Fernando III el Santo, Estudio numismático," *Anuario del cuerpo de archiveros, bibliotecarios, y arqueólogos* (1934), pp. 129-46, rpt. in *Obra Completa* (Saragossa, 1972), p. 641.

⁸ O. Gil Farrés, *Historia de la moneda española*, 2nd ed. (Madrid, 1976), pp. 334-44 (hereafter, *Historia*); Pio Beltrán Villagrasa, "Dos tesorillos de vellones ocultos en la primera época del reinado de Alfonso X," *Numisma* 14/68 (1964), pp. 55-79, and 14/69 (1964), pp. 7-20 (hereafter, Beltrán); E. Collantes Vidal, "Notas sobre las acuñaciones de Alfonso X," *Acta numismática* 4 (1974), pp. 181-204.

phantom coinages, these apparent inconsistencies between written records and surviving coins should serve as a warning that documents can be misconstrued and in some cases are simply wrong in the information they give.

By its congruity with other hoards, the Bourgey hoard is both a disappointment and a sign post. With another find coming to light which is not substantially different from those already known, it seems less hopeful that one extraordinary hoard will eventually provide all the answers. At the same time, the normality of the Bourgey hoard points to the necessity of using all available evidence, especially numismatic and diplomatic, to establish a logical chronology for the billon coinage of Castile in the thirteenth century. To do this, it is necessary to focus on the enigmatic reign of Fernando III and the manipulations of his son, Alfonso X. Once the monetary policy of these two monarchs is described, the major numismatic problems of the period begin to fade. But to understand their policy, one must first understand the fiscal traditions Fernando III inherited upon becoming king in 1217.

THE COINAGE OF CASTILE-LEON BEFORE 1217

Historians are emphasizing more and more that medieval Iberia was not so much a military zone where Islam and Christianity clashed in unbridled hostility as it was a frontier across which ideas and practices passed. This is plainly evident in the monetary system that the kings of Castile-Leon developed. The first certain examples of royal money in Castile-Leon after the fall of the Visigothic kingdom are from the reign of Alfonso VI (1065–1109) when the economy of the Christian states in general was prospering with the increased success of the reconquest. Many of the surviving coins of Alfonso VI invoke Toledo and were probably introduced after the capture of that city in 1085.9 The coins

• For a discussion of possible royal issues before the time of Alfonso VI, see Pio Beltrán Villagrasa, "Dinero de vellón de Fernando I, el magno, en la colección 'los Arcos' "Caesaraugusta (1952), rpt. in Obra Completa, pp. 585-605. For a survey of Spain's economy and money up to this time, see L. García de Valdeavellano, "La moneda y la economía de cambio en la península Ibérica desde el siglo xi," Moneta e



which Alfonso had minted in his name were denarii. True to their Carolingian origin, Castilian denarii or dineros were counted in units of twelve called solidi or sueldos.¹⁰

Outside Iberia, the billon denarius was virtually the only coin minted in western Christendom. Christian Spain's proximity to Islam, however, dictated a more complex arrangement. There had always been a degree of trade between Christian and Moorish Spain. Now as the Umayyad caliphate disintegrated and the Christian princes exacted tributes from the Taifa rulers, large amounts of Islamic gold flowed into the Christian kingdoms. Alfonso VI's dineros, then, would have circulated alongside the gold and probably the silver pieces of the Muslims. Alfonso and his daughter, Urraca (1109–26), also allowed some towns and episcopal sees to mint their own coins, but by the close of the twelfth century, all minting was, at least nominally, under the auspices of the crown in Castile and Leon with the exception of the archbishopric of Santiago.¹¹ In the twelfth century, these billon coins probably floated in value in relation to Islamic gold. This was especially necessary since gold was coming from more than one Taifa ruler whose issues, though in theory maintaining the standards of the Caliphate, differed in weight and fineness. The Almoravid conquest of the Taifa states in the last decade of the eleventh century changed this situation only slightly. While temporarily cutting off the gold flowing north, it at the same time brought a new gold coin to the peninsula. Known to Christians as the morabetino, the Almoravid gold dinar probably had an intended weight of 4.2 g, though the specimens

scambi nell' alto medioevo (Spoleto, 1961), pp. 203-30; in the same publication see C. Sanchéz-Albornoz, "Moneda de cambio y de cuenta en el reino Astur-leones," pp. 171-202.



¹⁰ Alfonso's use of the denarius is a facet of his French inclinations that often goes unnoted.

¹¹ For royal control of coinage in twelfth century Castile and Leon, see the discussion in A. M. Balaguer, "Statutes Governing Coinages in Iberian Kingdoms in the Middle Ages," *Problems of Medieval Coinage in the Iberian Area*, ed. M. Gomes Marques (Santarém, 1984), pp. 132-36 (hereafter, *Problems of Medieval Coinage*); *Historia*, pp. 316-17, 321-22; for the trade between Christian and Muslim Spain, see T. Glick, *Islamic and Christian Spain in the Early Middle Ages* (Princeton, 1979), p. 124-34.

examined by Hazard averaged 4.05 g. This new dinar differed sufficiently in its type (and perhaps fineness) to be distinguished in the documents from its predecessors. The Almoravid unity of southern Spain, however, quickly dissolved and again Taifa lords issued their own gold, now theoretically adhering to the standard of the Almoravid dinar.¹²

One of the strongest of the Taifa kingdoms was Murcia. It was the last to succumb to the Almohads, who swept into Spain in the wake of Almoravid collapse. The king of Murcia had tried to protect his kingdom by an annual gold tribute to the king of Aragon, though his payment was probably erratic. The Murcian gold flow to the Christians was irrevocably cut off when that kingdom fell to the Almohads in 1172. By 1173, Alfonso VIII of Castile (1158-1214) issued his own morabetino based on the Murcian model.¹³ These morabetinos alfonsin continued

12 H. W. Hazard, The Numismatic History of Late Medieval North Africa, ANSNS 8 (New York, 1952), pp. 48 and 61; Miles, Umayyads (above, n. 1); A. Losa traces the transition from the use of Taifa gold to morabetino in the Portuguese documents, "The Money among the Mozarabs of Portuguese Territory," Problems of Medieval Coinage, pp. 289-93. See also the discussion of gold minted in eleventh century Spain (both Islamic and Christian imitations) in A. M. Balaguer, "The Influence of the Moslem Coinage upon the Monetary Systems of the Medieval Iberian Kingdoms," Problems of Medieval Coinage, pp. 308-11, 325-27, and C. M. Cipolla, Money, Prices and Civilization in the Mediterranean World (New York, 1967), p. 23.

13 Ramon Berenguer of Aragon-Catalonia had been collecting tribute from the Moors of Murcia and Valencia since at least 1150. He, however, campaigned against Lobo of Murcia ca. 1158 and his son, Alfonso II, continued to push south after Berenguer's death in 1162. Zurita reported that by the 1170s, the Murcians had not paid tribute since Berenguer's death, although payment may have been resumed in 1171, shortly before Murcia's fall. Though there is probably a link between the fall of Murcia and Alfonso VIII's imitation of the morabetino, Vives' conclusion that there had been a steady flow of Murcian gold to the Christian lords which when cut off produced a severe economic crises needs reexmination, A. Vives, La Moneda Castellana (Madrid, 1901), pp. 15-16; Historia, p. 322. See further C. Sánchez-Albornoz, "¿Devaluación monetaria en León y Castilla al filo del 1200?" Homenaje a Vicens Vives (Barcelona, 1965), p. 607 (hereafter, Sánchez-Albornoz). For "oro alfonsi" in 1173, A. González Palencia, Los mozárabes de Toledo en los siglos XII y XIII (Madrid, 1926-30), vol. 1, p. 74; J. Zurita, Anales de Aragon, vol. 1, A. Candles Lopez, ed. (Saragossa, 1967), chap. 28. For Aragón and relations with Murcia, see J. Caruana, "Alfonso II y la reconquista de Teruel," Teruel 7 (1952), pp. 97-141. Lastly see Balaguer's useful comments on Vives' hypothesis, Balaguer (above, n. 12), pp. 328-33.



to be struck during his reign and during the brief reign of Enrique I (1214–17), but there are no surviving morabetinos that can be attributed to the reign of Fernando III or his successors. At the same time, in the separate kingdom of Leon, Fernando II (1157–88) and Alfonso IX (1188–1230) issued their own version of the morabetino. Sancho I of Portugal (1185–1211) likewise struck an imitation of the piece. Hence, by the closing years of the twelfth century, there was a variety of gold morabetinos in the peninsula, all based on the original Almoravid dinar.¹⁴

How much the Christian morabetinos varied from one another in fineness is difficult to determine due to the unavailability of these coins. The specific gravities of the nine Castilian morabetinos alfonsin in the ANS cabinets suggest that this piece maintained a fairly consistent fineness of around 87 percent, though it may have dropped to 83 percent in later years. Of the three morabetinos identifiable as Leonese in the ANS trays, two are from the reign of Fernando II and are roughly 87.5 percent and 80.3 percent gold. The third belongs to Alfonso IX and is also approximately 80.3 percent gold. Though any conclusions based on such a limited sample must remain tenuous, the morabetino of Leon was perhaps initially issued at the same strength as the morabetino alfonsin but was debased before the end of Fernando II's reign. 15

The Christian imitations of the morabetino preserved a coin that was already obsolete in the western Muslim world. The Almohads had been gradually overthrowing the Almoravid empire since the early twelfth century. They had crossed to Tarifa in 1146, and the fall of Murcia in 1172 completed their conquest of Islamic Spain. Sometime after 1146, the Almohads, under their caliph 'Abd al-Mu'min, began to strike gold coins but according to a different weight standard than those of the Almoravids or the Cordovan caliphs. Whereas the morabetino averaged



¹⁴ Balaguer (above, n. 12), pp. 332-33.

The Castilian morabetinos at the ANS bear dates corresponding to the following Christian years and contain the following percentages of gold: 1185, 89; 1185, 86.7; 1188, 86.7; 1209, 84.3; 1211, 86; 1212, 87.5; 1212, 84.3; 1213, 85.2; 1217, 83.5; the Leonese morabetinos bear no dates. The rather consistent readings for the Castilian morabetinos may help explain why that coin seemed to enjoy a preeminence in the peninsula, Balaguer (above, n. 12), pp. 329 and 333.

4.05 g, the Almohad dinar weighed only about 2.27 g. A half dinar piece also appeared at approximately 1.15 g. Besides being lighter than the morabetino, the Almohad dinar and half dinar were easily distinguished by the "square in circle" design they introduced. Though the Almohad takeover had halted the tribute paid the Christian princes in morabetinos, the new Almohad gold pieces surely filtered across the frontier through trade, ransom, and booty.

The fueros, or law codes, granted to Castilian frontier towns in the later twelfth century frequently express some values in morabetinos, others in dineros, and still others in mencales. In 1179, the master of Santiago granted a fuero to the inhabitants of Ucles. A separate, more detailed set of laws for Ucles is not dated, but appears to be an elucidation of the original fuero, probably redacted not long after 1179. This second set of laws contains a provision entitled "De calonna de morabetino et de V solidos" which reads, "Calumpnia de morabetino de III menkales seiat; et calumpnia de V solidos II menkales et medio."17 "Mencal" is a corruption of the Arabic word mithqal. It had been the common name for the dinar of the caliphate and for the debased gold of the eleventh century Taifa rulers. Mithqal was still used in the later twelfth century, at least among the Arab speaking merchants of Toledo, as a synonym for the dinar of the Almoravids, the morabetino. According to the fuero of Ucles, however, a mencal represented only one third the value of the morabetino. Though we do not know the fineness of the Almohad gold coins, the half dinar weighed about 1.15 g and three could easily have been accepted in place of the morabetino. In that the name mencal implies an Islamic gold coin, in twelfth century documents it probably refers to the Almohad half dinar; or, perhaps, to older, inferior Taifa gold coin. 18 Though some documents expect the mencal to be paid



¹⁶ Hazard (above, n. 12), p. 48; *Historia*, pp. 198-99; J. F. O'Callaghan, *A History of Medieval Spain* (Ithaca, 1975), pp. 227-29.

¹⁷ P. Fidel Fita y Colomer, "El fuero de Ucles," Boletín de la (Real) Academia de la Historia 14 (1889), p. 328, also pp. 302-5 and 355 (hereafter, "Ucles").

¹⁸ Historia, p. 199; the occasional "obulum auri" or "meaja auri" may also refer to the Almohad half dinar. It is conceivable that these terms signify a morabetino cut in half, but this seems unlikely, as obulum or meaja connotes a small coin, not simply half a large coin. See J. González, El reino de Castilla en la epoca de Alfonso VIII (Madrid, 1960), p. 451, 273 (hereafter, Alfonso VIII); "meaja" in M. Alonso, Diccionario medieval español (Salamanca, 1986); J. Rodrigues Marinho, "The Islamic Coins

off in billon as well as in kind, it, like the morabetino, must have originally represented a value in gold.¹⁹

The ratio of three mencales to the morabetino in the Ucles fuero is not steadfast. The original version of the fuero granted to Zorita de los Canes in 1180 reads, "el maravedi de las calonnas sea de tres mentales e medio." This same rate for the payment of fines (calonnas) appears in the early Latin versions of the fuero of Cuenca, granted ca. 1179–80. It thus appears in later fueros based on the Cuenca model. The second fuero for Zorita, granted by Fernando III in 1218, the fuero of Heznatoraf, granted by Fernando probably in the 1240s, as well as the fuero of Alcázar all incorporate a rate of $3\frac{1}{2}$ mencales to the morabetino. Yet the fuero of Cuenca, and thus its descendants, value the morabetino at four times the mencal in two other provisions. Still, the fuero of

in the Portuguese Territory," Problems of Medieval Coinage (above, n. 11), p. 304. If there is doubt about the meaja or obolum auri, there should be none about the mencal. Mencal clearly was not a physical fragment of a morabetino; if it were, there would be little sense in declaring equivalencies between mencales and morabetinos as the matter could be settled by weighing the fragments.

- ¹⁹ Alfonso VIII, vol. 3, pp. 636-37, 946, where no rate is specified between billon and the mencale; very many of the fueros make provision for the fines to be made in kind rather than money, but see Guadalajara which specifically designates mencales, in J. González, Reinado e diplomas de Fernando III, vol. 2, p. 92, 75 (hereafter, Fernando III).
- ²⁰ Alfonso VIII, vol. 2, p. 574, 339; "El Fuero de Zorita de los Canes," Memorial histórico español, vol. 44, R. de Ureña y Semenjaud, ed. (Madrid, 1911), p. 421 (hereafter, "Zorita").
- ²¹ For Cuenca and Heznatoraf see *Fuero de Cuenca*, R. de Ureña y Semenjaud, ed. (Madrid, 1935), pp. 404-5 (hereafter, *Cuenca*); for Zorita and Alcázar, see "Zorita," p. 391; for a recent discussion of the date for Cuenca, see J. F. Powers, "Frontier Competition and Legal Creativity," *Speculum* 52 (1977), pp. 483-86; for the dating of Heznatoraf, see Ureña's preface in *Cuenca*, pp. cv11-cx.
- "Quicumque peccuniam almonete solvere debuerit, solvat eam secundum computacionem quotor menkallorum pro aureo," the "forma sistematica" of the Cuenca fuero, compare with other versions such as Heznatoraf, Cuenca, pp. 668-69; for the corresponding provision in Zorita and Alcázar, see "Zorita," p. 300. Where the Zorita text reads "un mencale por maravedi," it almost certainly originally read "iiii mencale"; the second example of the 4 to 1 rate is the provision "Telonearius igitur qui pedaticum acceperit de unoquoque aureo det domino domus octo denarios et de uniquoque menkale, duos denarios," which appears in the earliest versions of the Cuenca fuero. The statutes governing tariffs, of which this provision is part,



Guadalajara, granted in 1219 by Fernando III, reads "Estos maravedis de las calonnas sean de tres mencales," and so agrees with the Ucles fuero.²³

These differences perhaps reflect uncertainty about the relative value of the two kinds of gold coin. The Almohad pieces as well as the Taifa ones, which were surely still around, may well have fluctuated in weight. The Islamic world often conducted transactions by weighing coins rather than counting them. Weight standards, then, were not always strictly adhered to in minting. This factor and perhaps doubts over fineness may account for the different equivalencies in the fueros. The larger weight of the morabetino made it a more convenient piece in large transactions and this may have added to its edge over the mencal in some markets. The Almohads were eventually prompted to mint a double dinar, called by the Christians a dobla, which would have competed with the morabetino in this regard.24 One should note that the rates of payment for fines are all between three and 3.5 mencales. It is possible that when the Cuenca fuero uses a rate of 4 to 1, the rate is deliberately higher or perhaps the payment of fines was deliberately lenient. The evidence does not point to any consistent decline in the value of the mencal.

In relation to gold, the billon of Castile-Leon steadily declined in value during the twelfth century. The Annales Toledanos reveal that in 1117 the morabetino was worth four sueldos or 48 dineros and Gil Farrés cites a document dated 1134 that gives the rate of five sueldos or 60 dineros to the morabetino.²⁵ With the division of Castile-Leon in 1157, both kingdoms proceeded to mint their own billon.

For Castile during the reign of Alfonso VIII, documents giving a direct rate of exchange between the morabetino and dinero seem

appear to belong to the original fuero, but are separated from it by later insertions. The fuero of Heznatoraf does not contain these statutes, *Cuenca*, pp. 846–49 and 839, and see Ureña's introduction, p. clxix; for Alcázar and Zorita, see "Zorita," pp. 399 and 408.

- 23 Fernando 111, vol. 2, p. 92, 75.
- ²⁴ Hazard (above, n. 12), pp. 68 and 150.
- ²⁵ "Anales Toledanos II," España Sagrada 23, E. Flórez, ed. (Madrid, 1767), p. 404; Vives (above, n. 13), p. 25; Historia, p. 317.



nonextant.26 The edition of the fuero of Ucles cited above does provide an indirect comparison. If 2.5 mencales equalled five sueldos, three mencales would equal six sueldos. Hence, the morabetino here equals six sueldos or 72 dineros.²⁷ This same rate is reflected in the formulaic penalty clauses of the royal chancery. In the reign of Alfonso VII and Alfonso VIII the chancery frequently set the penalty clauses for infringement of the royal will at 1000 morabetinos. This was not an unimaginable sum, as 1000 morabetinos was considered a feasible ransom for Moorish captives during the same period. As early as 1156, royal charters occasionally expressed the penalty as "6000 sueldos." If this was meant to be the same as 1000 morabetinos, it translates to a rate of 6 sueldos to 1 morabetino. E. Collantes refers to a morabetino worth 6 sueldos but does not supply a date or documentation.²⁸ As Fita suggested, the Ucles laws may reflect customs dating back as far as 1157, when that site was recovered by the Christians;29 therefore, we cannot say with certainty that 72 dineros per morabetino was still the effective exchange by 1179, though it seems to have been the rate toward the end of Alfonso VII's reign.

Alfonso VIII died in 1214, two years after his victory at Las Navas. His young son, Enrique I, survived him by only three years and was accidentally killed in June of 1217. Fernando III, nephew to Enrique and son of Alfonso IX of Leon, assumed the throne of Castile on July 2. His father initially tried to take Castile for himself, but reached a truce with Fernando on November 26, which was to last until the following Pentecost. A separate undated charter records an agreement undoubt-



A concise summary of many of the monetary citations of this period is provided in J. Gautier-Dalché, "L'Histoire monétaire de l'Espagne septentrionale et centrale du 1x° au x111° siècles," Economie et société dans le pays de la couronne de Castile (London, 1982), pp. 66-95.

²⁷ "Ucles," p. 328; Beltrán (above, n. 8), p. 62.

²⁸ Alfonso VIII, vol. 2, cf. docs. 139, 160, 226, and 531. The chanceries of Castile and Leon continued to use both phrases even after the two sums no longer equalled each other; for Leon, see J. González, Alfonso IX (Madrid, 1944), vol. 2, p. 67, 40 (hereafter Alfonso IX); for the ransoming of Moorish captives, see Alfonso VIII, vol. 2, p. 543, 412; E. Collantes, "Monedas de Alfonso VIII y sus problemas," Acta numismálica 3 (1973), p. 114.

²⁹ "Ucles," p. 351.

edly reached after this truce. This pact has Fernando promising to pay Alfonso IX 11,000 morabetinos, which the king of Leon claimed Enrique owed him. Fernando was supposed to pay 5,000 by the following Easter. The sum was expected to be given "in dineros at 7.5 sueldos of burgaleses or 15 sueldos of pepiones per morabetino." The Castilian monarch never made the payment. On August 26, 1218, in Toro the two kings made another agreement. This version specifies that the sum could be rendered as 11,000 gold morabetinos alfonsin or be paid in burgaleses or pepiones at the same rate as before. The most striking element of the two treaties from a monetary point of view is that there are now two dineros in Castile, a burgalés and a pepión. One morabetino alfonsin is now worth 90 burgaleses or 180 pepiones.

At first glance, the pepión might be assumed to be an obol piece. Obols of billon were occasionally issued in conjunction with denarii in the Middle Ages. About half the size of a denarius, the obol represented half its value. Recently Francisco Hernández discovered a copy of a decree that Alfonso VIII sent to the municipal council of Toledo in 1207 which established price ceilings for various commodities sold within the kingdom. This edict expresses all its prices in either morabetinos or pepiones. Several times it refers to "dineros y meaja de pepiones." Contemporary documents indicate that meaja was the Spanish vulgar equivalent for obolum, though it could conceivably indicate a dinero cut in half. In either case, the fact that there were "meaja de pepiones" indicates that the "dinero pepión" was, as its name implies, a common size denarius.

Since the pepión was not an obol, logic demands that it was not originally intended to serve as half a burgalés. If the burgalés was strong enough to require a half piece, Alfonso would have issued an obol. Even this, he would have done begrudgingly as obols were expensive. In terms of labor, it was cheaper for the mint to strike a quantity of burgaleses than twice that number in obols. Using a full sized denarius as half a burgalés would require not only more labor but



³⁰ The three agreements appear in *Alfonso IX*, vol. 2, pp. 458–59, 350; pp. 460–62, 352; p. 479, 366.

³¹ F. J. Hernandez, "Las cortes de Toledo de 1207," Las cortes de Castilla y León en la edad media (Valladolid, 1988), pp. 219-63.

³² See for example *Alfonso VIII*, vol. 3, p. 642, 950; p. 648, 951; cf. Marinho (above, n. 18), p. 305.

an increase in alloy as well. To issue the pepión as half a burgalés would not only have been highly unlikely but unprecedented in medieval minting. The denarius pepión must represent a drastic depreciation of the Castilian dinero.

Billon attributable to Alfonso VIII survives in numerous types, and several of these types exist both in denarii and obols.38 Such variations in type might suggest several changes in the value of the dinero during his reign. Let us assume for the moment that both the premium attached to the Castilian dinero and the silver/gold ratio remained constant in Alfonso VIII's reign. If the king started with a coin worth 72 to the morabetino and reduced the silver content of each successive issue by a third (a percentage of reduction not uncommon in the later thirteenth century), the third issue would have a value of 170 to the morabetino. A fall in the dinero's premium as a result of its loss of purchasing power or a slight rise in the price of gold, could easily have reduced the rate to 180 dineros. The pepión is mentioned in the will of Sancho I of Portugal, which may have been redacted as early as 1188. No hint of the value of the coin is given. If the pepión was circulating in 1188, it may not yet have fallen to the value of 180 to the morabetino that appears in 1217.34

It should be realized that the act of debasement yields only immediate benefits for the authority issuing the coin. In a simple debasement, a government mints a new coin with less silver and proclaims it to have the same value as the old one. Those bringing bullion or old coins to the mint will be paid in new coins. The government can also pay off old debts and current expenditures in new coin. But the advantage here gained quickly vanishes when the debasement is detected. Prices will



³³ For the billon coins of this era see Heiss, pl. 4; *Historia*, p. 325; E. Collantes, "Monedas de Alfonso VIII" (above, n. 28), pp. 113-36.

A. C. Teixeira de Aragão, Descripção geral e historica das moedas cunhadas em nome dos reis, regentes e governadores de Portugal, vol. 1. (Lisbon, 1874), p. 333. The premium of a coin is the added value attached to it, in other words, the difference between its extrinsic and intrinsic values. Depending on the need for coins, the premium attached to the coin will vary, see J. Munro, "Bullion Flows and Monetary Contractions in Late Medieval England and the Low Countries," Precious Metals in the Later Medieval and Early Modern Worlds, J. F. Richards ed. (Durham, NC, 1983), p. 109.

rise according to what the market judges the new coin to be worth no matter what the king may insist. The government may be able to enforce its rate in some instances, but when it strikes again it must attract bullion to the mint by offering a competitive price. People would simply not bring bullion in unless they were paid in gold or, if in billon coins, according to the effective market value of the coin. At worst the debased coin might be so discounted that the crown could not cover the cost of minting if it strikes on the same standard; at best, it might be able to make a slight profit. In order to make more than a nominal profit on its next issue, the crown must debase the coin even further.

Cipolla warned that the "old tale of 'spendthrift and warlike princes'" is too often used to explain currency depreciation and emphasized that other factors, such as an inelastic supply of precious metals and a growing demand for money, contribute to debasement. In the reign of Alfonso VIII, however, the expense of waging war probably contributed heavily to the king's need to debase. Alfonso had been engaged against the Almohads since 1172 and this undoubtedly taxed his resources. The events of the last decade of the century surely strained them more. By 1190, the kings of Aragon and Navarre had signed an alliance against him. The following year the rulers of Leon and Portugal also declared themselves hostile. Peace was only restored among the Christian princes in time for Alfonso VIII to rush south and suffer his disastrous defeat by the Almohads at Alarcos in 1195. Leon and Navarre renewed their harassment and Castile did not enjoy any substantial peace until 1197.36

By 1207, Alfonso sought to freeze prices. His price ceilings are expressed sometimes in dineros pepiones and sometimes in gold morabetinos. Debasement of the billon would have caused a rise in prices expressed in billon but would not have affected prices expressed in gold. The decrees make it clear that the morabetino, whose integrity Alfonso maintained, was itself losing strength. The kingdom was thus afflicted by real inflation, not simply by an artificial adjustment of



³⁵ C. M. Cipolla, "Currency Depreciation in Medieval Europe," The Economic History Review, 2nd series, 15 (1963), p. 413, 419.

³⁶ O'Callaghan (above, n. 16), pp. 239-45.

prices. This inflation added to the crown's financial difficulties and probably was an additional reason why it had resorted to debasement of its billon coinage.

Gil Farrés cites a document that he dates as 1212 which reads, "xx sueldos de los burgaleses... moneda vieja." Out of context and with the lacuna, the reference is ambiguous, but probably the burgaleses are the "old money" as opposed to the more recent pepiones. If the crown claimed the pepión to have the legal equivalence of the older burgalés, the older coins would have become scarce. Yet, in the treaties of 1217-18, both appear to be in circulation. Alfonso VIII, abandoning any pretence as to the value of the pepión may have retariffed it, devaluing it to half of one of his previous coins, the so-called burgalés. A similar tactic was used by Fernando IV at the end of the thirteenth century and would become almost common in the fourteenth and fifteenth centuries.38 Retariffing was advantageous in that if the new values were just, the older coins would be lured out of hoards back into circulation. According to the Primera crónica general, the king, after his great victory at Las Navas in 1212, promised "to improve the fueros and to reduce the tributes." He apparently held a cortes at Burgos in December of 1212 to accomplish these ends.39 A reform of the coinage soon after the victory may have been part of the same spirit of reform. Allowing both old and new coins to circulate in parity with each other would have been beneficial to the crown as well as the populace.



³⁷ Historia, p. 326; Sánchez-Albornoz (above, n. 13) cites this as "xx sueldos de los burgaleses de la moneda vieja" but refers only to Gil Farrés. Presumably the correct reading is with the lacuna. Sánchez-Albornoz and Gil Farrés also allude to large silver coins in these years. This is based on a phrase in the "Fuero of Guipuzcoa" dated 1200 which reads "... pectet concilio triginta solidos argenti, id est, viginti ovalos cantabros"; however, this document is a clear forgery, probably dating to the seventeenth century. Though Muslim dirhams undoubtedly circulated and may have been imitated by Christians, this odd reference must be suspect. See Alfonso VIII, vol. 3, pp. 224–25, 692; Historia, p. 324; Sánchez-Albornoz, p. 609, n. 20.

³⁸ For revaluation of billon in the fourteenth and fifteenth centuries, see A. MacKay, *Money, Prices and Politics in Fifteenth Century Castile* (London, 1981), chs. 2 and 3.

³⁹ J. F. O'Callaghan, "The Beginnings of the Cortes of Leon-Castile," *American Historical Review* 74 (1969), p. 1523.

Leon, like Castile, had inherited the coinage of Alfonso VII which toward the end of that king's reign was probably valued at 72 dineros to the morabetino. In 1182, Fernando II allowed the archbishop of Santiago de Compostella full lordship over the mint of Compostella. He added that if the king or his successor chose to diminish or strengthen the royal money, Compostella would be free to maintain its own money within the jurisdiction of the archbishopric. 40 Leonese documents from the last decades of the twelfth century refer not only to "solidos jacobensis," i.e. the money of Santiago, and "solidos monete regis" or "solidos legionensis," i.e. the royal money, but also to sueldos "merguliensis," "angovinis," and "turonenses." A gift to the monastery of San Vicente in 1191 was recorded as "CCC solidos, XLIII aureos probatissimos valentes." Aureos is regularly used in the documents for the morabetino and is here equal to just about seven sueldos.42 If these are sueldos of the royal money, which we cannot be sure, the royal dinero had lost purchasing power since 1157. J. González provided convincing evidence that the money of Santiago dropped slightly between 1186 and 1190. Perhaps the royal money dropped as well around this time. In 1182 Fernando had hinted at the possibility of debasement. 48 By 1217, the king's money, the leonés, appears to be reckoned at an even lower rate of eight sueldos or 96 dineros to the morabetino.44

- 40 The text of this charter is in Sánchez-Albornoz (above, n. 13), p. 615, n. 67.
- ⁴¹ Alfonso IX, vol. 1, pp. 297-98; sueldos merguliensis were the popular coins of Melgueil near Montpelier; for two examples of the money of Anjou and Tours in Leon not included in González' discussion, see S. García Larragueta, Catálogo de los pergaminos de la catedral de Oviedo (Oviedo, 1957), p. 75, 1120, and p. 81, 280. According to Larragueta, they are dated March 1176 and June 1185.
- ⁴⁸ L. Serrano, Cartulario de San Vicente de Oviedo (Madrid, 1929), p. 285, 312. Why González suggested that this reference means that the morabetino equalled "7.20 sueldos" is puzzling, Alfonso IX, vol. 1, p. 298; Sánchez-Albornoz, p. 215, simply repeats González's interpretation of this clause.
- ⁴³ Alfonso IX, vol. 1, p. 298; Sánchez-Albornoz's reference (p. 616) to "fortis monete regis" in 1201 is misleading—the original citation in González is simply "fortis monete" and thus could refer to any coinage.
- 44 El monasterio de San Pelayo de Oviedo, historia y fuentes, 1, Colección diplomática (996–1225), F. J. Fernández Conde et al., eds. (San Pelayo, 1978), p. 105, 50; S. García Larragueta (above, n. 41), p. 94, 244. Vincente Argüello dates to 1221, "CCL moravetinos legionis monete scilicit viii solidos legionis pro quolibet moravetinos" (in



With the turn of the century, clear evidence for a tax designed to maintain the coinage emerges in both Castile and Leon. A charter of Alfonso IX of Leon records that in a "plena curia" held at Benevente in 1202, the king "vendidit monetam suam" to the people for a period of seven years for a payment of one morabetino per person. 45 Alfonso could have "sold" the coinage in the sense that he was requiring the people to pay for the continuance of good coins. Throughout the twelfth century, lords in feudal Europe had at times sworn to maintain the fineness of their coins in exchange for a payment from their subjects. Sometimes they pledged to maintain the money for life in exchange for one levy, while in other cases a payment was exacted at regular intervals.46 The expression "vendidit monetam" could, however, represent more than a promise not to debase. Sánchez-Albornoz suggested that Alfonso was, in fact, selling his right to mint for seven years.⁴⁷ Interpreted as such, the agreement represents a more stringent check on the monarchy. The king is not simply swearing to preserve the integrity of the coin, he is foregoing the right to mint at all. James I of Aragon (1218-76), in a cortes at Huesca in 1221, agreed to such a restriction. He confirmed the dinero of Aragon (the iaccensis), promising not only to preserve its weight and alloy, but also not to increase the number of coins for a period of seven years. Moreover, in 1258, James confirmed the Catalonian coinage for life. Bisson pointed out that here, too, the king was restricted as to when he could mint: the "charter



[&]quot;Memorias sobre el valor de las monedas de D. Alfonso el Sabio," Memorias de la Real Academía de la Historia, vol. 8, [Madrid, 1852], p. 265); also cited in Fernando III, vol. 1, p. 463, n. 12; see also F. Mateu y Llopis, "Solidi' y 'denarii' en los reinos cristianos occidentes del siglo xIII," Acta numismática 1 (1971), pp. 116–17. Gil Farrés refers to a document of 1184 (Historia, p. 326) which reads, "viii solidos legionenses pro qualibet morabetino" but this seems to be a mistaken reference to the document above, dated 1221 according to the other three authors.

⁴⁵ Alfonso IX, vol. 2, p. 236-37, 167.

For the development of the money tax in France, Catalonia, and Aragon, see in general T. N. Bisson, Conservation of Coinage (Oxford, 1979).

⁴⁷ C. Sánchez-Albornoz, "La primitiva organización monetaria de León y Castilla," Estudios sobre las instituciones medievales espanolas (México, 1965), pp. 471-77; cf. O'Callaghan (above, n. 39), pp. 1518-19.

made explicit allowances for the necessity that might, from time to time, require the minting of new coins of the fixed standard."48

A similar practice can be seen in Portugal. In 1254, Afonso III of Portugal, rather than debase his coinage, promised to conserve it for seven years in exchange for a payment from his subjects. The pertinent documents from these years do not state that he was to cease minting. Seven years later, however, another agreement makes it clear that he had stopped. The king explained in a proclamation of 1261 that "when I... had begun to make my money according to what I believed was permitted to me by right and custom, the prelates, barons, religious and populace of my kingdom ... [said] that I could not make this money either by right or by custom nor ought I make it."49 Afonso's new money represented a manipulation. It was stronger than the old money.⁵⁰ He doubtless felt that since the seven years were up, it was his prerogative to issue what he wanted. The Portuguese cortes, however, believed that they had a say in when and what the king minted. The outcry was such that Afonso agreed to the following: in exchange for another payment, he would strike no more of the new money for four years, then only mint for two years in limited quantities (up to twenty batches, "fornacias") and then not strike again for the rest of his life. In addition, it was stipulated that his successors were likewise allowed to mint only once in their reign, again only for two years with the same limitations on quantity. These restrictions applied only to the striking of billon, for the king added, "I retain, however, for me and my successors, that we can make morabetinos of gold when we wish."51

It is clear that conservation of coinage, as it developed in thirteenth century Iberia, included control of when the king minted. A final



⁴⁸ Bisson (above n. 46), p. 119, see also pp. 92-93. E. J. Hamilton, *Money, Prices and Wages in Valencia, Aragon and Navarre 1351-1500* (Cambridge, MA, 1936), pp. 83-85, shows a similar restriction on the king's right to mint in Valencia, pp. 8-9.

⁴⁹ Portugaliae Monumenta Historica: Leges et Consuetudines (Liechtenstein, 1967), vol. 1, pp. 210-12 and 192-97 (hereafter, Portugaliae Monumenta).

⁵⁰ "Et nova moneta quam ego nunc faciebam valeat et duret in perpetuum cum eadem veteri moneta tali modo videlicet quod duodecim denarii de moneta nova valeant per cambium in omnibus emptionibus et venditionibus et rebus aliis sexdecim denarios de veteribus denariis," *Portugaliae Monumenta*, pp. 210–11.

⁵¹ Portugaliae Monumenta, pp. 211-12.

example is provided late in the reign of Alfonso X of Castile. By that time the moneda tax had become customary in Castile-Leon. Alfonso had sought to collect it not only every seven years, but sometimes more often. In response to this abuse, the Hermandad of 1282, in its list of regal rights, allowed "moneda at the end of seven years where they used to give it, and as they used to give it, while the kings do not order money to be made."52 In this light, the implications of Alfonso IX of Leon selling his right to coin for seven years should be considered more carefully. The charter from his cortes stipulates that at the end of the seven year period, the king could choose not to sell his right to coin again or the people could opt not to buy it.58 This stipulation makes most sense if no billon was struck during the seven year period. At the end of the period, if there were a sufficiently high demand for coin in the kingdoms, the king could mint at a profit. If the king could not afford to mint according to the old standards, he would hopefully opt to sell the right to coin which the people would choose to buy. If the 1202 sale represented only a promise to maintain the old standard and allowed the king freedom to mint when he saw fit, there was no need for such a stipulation. The king could exact the tribute regularly and leisurely wait until market conditions were right to strike. There would be no need for him to reserve the right not to sell! Hence, the ambiguous reference González cites of "moneta nova" in 1223 may very well represent a royal issue, minted 21 years after Benevente. The term moneda appears frequently in the Leonese documents after 1202 as a payment due the crown.54

The cortes of Benevente, in some respects, anticipates later developments in the Iberian kingdoms. When Afonso III sold his right to coin in 1254, the Portuguese dinero was very weak. It took three of them to equal one leonés. By 1261, however, Afonso obviously felt it was more beneficial to strike than to sell the privilege again. At the same



^{52 &}quot;Moneda a cabo de siete annos do la solier [sic] dar, et como la solien dar, non mandando los Reyes labrar moneda," R. Escalona, Historia del real monestario de Sahagún (Leon, 1982), p. 619; E. S. Procter, Curia in Cortes in León and Castile, 1072-1295 (Cambridge, MA, 1980), p. 190 (hereafter, Procter).

⁵³ Alfonso IX, vol. 2, pp. 236-37, 167.

⁵⁴ Alfonso IX, vol. 1, p. 298; O'Callaghan (above, n. 39), p. 1519.

Portugaliae Monumenta, vol. 1, pp. 192-97.

time, he appears to have attempted to increase his profit by cutting down on the labor costs of minting so debased a coin. He issued a slightly stronger coin, an innovation to which the populace objected. Had the king simply issued the old coin at the end of the seven year period his right to do so might never have been questioned.

By 1215 a tax called moneda existed in Castile as well. In confirming his father's donations to the monastery of San Andrés de Arroya, Enrique I conceded that the tenants of the monastery did not have to pay any taxes to the crown except moneda. Moneda is mentioned twice more in the available documents of Enrique's short reign.⁵⁷

A rise in the value of gold may have contributed to the dinero's loss of purchasing power in twelfth century Castile-Leon. The Almohad conquest and the curtailment of tributes doubtlessly caused gold to become scarcer in the Christian kingdom in the later twelfth century. Nevertheless, the appearance of a tax intended to maintain the integrity of the coinage suggests that some of this loss was caused by debasement.⁵⁸

- The objection to a slightly stronger coin was that it confounded the value of the old. The new coin, if issued in limited quantities, was probably in demand, giving it a higher premium than the old. Thus, Afonso decreed "vetus moneta reducatur ad valorem pristinum et remaneat perpetuo in eo statu...." He then went on to define precisely how much more the new coin was to be worth. *Portugaliae Monumenta*, p. 210; n. 50 above.
- ⁵⁷ Alfonso VIII, vol. 3, pp. 702-3, 986; p. 720, 999; p. 746, 1015; O'Callaghan (above, n. 39), p. 1519; also on the emergence of moneda, see Procter (above, n. 52), pp. 54-55 and 82-83.
- establish the precise extent of the debasement during this period using diplomatic evidence. Beltrán's methodology has two particular problems. 1. The bimetallic ratio for each date has to be documented, which cannot be done, so we cannot judge whether the change in rate was caused by fluctuations in the price of gold or by debasement of the billon. His assertion that the price of gold rose around 1208 appears to be based on the evidence in Alfonso IX, vol. 1, p. 298, where González himself points out that the shift of the "marcha argenti canonice" from 45 sueldos in 1203 to 50 sueldos in 1208 may be explained by assuming that these are sueldos of two different coins. Using the same evidence, Sánchez-Albornoz (above, n. 13), pp. 615–17, suggests that the Leonese dinero may have been debased in these years, which is equally uncertain. 2. Beltrán's calculations, even if correct, only reflect how many dineros would buy a mark of silver at a certain date. This is not necessarily the



THE REIGNS OF ENRIQUE I (1214–17) AND FERNANDO III (1217–52)

According to the Latin chronicle, representatives from the towns as well as the nobility and clergy were summoned to Burgos in October 1214 to proclaim Enrique king.⁵⁹ The variety of coin types issued by his father, Alfonso VIII, bears witness to a vacillating monetary policy, and the assembly greeting the new king would doubtlessly have been concerned with the future of the coinage. Bisson concluded from his study of twelfth century Capetian France:

People of the royal domain are anxious about the coinages as a new king comes to power, they want the old, familiar deniers to continue in use without so much as a change of type, and they are willing to pay for assurances to such an effect. So much seems clear.⁶⁰

The populace of Castile had ample incentive to seek assurance of a sound fiscal policy from Enrique I's new government. Alfonso VIII had given them little chance to become accustomed to one familiar coin; further, Alfonso IX of neighboring Leon had apparently sold his right to coin for seven years.

There are no known billon coins attributable to Enrique. Moneda as a tribute appears in Castilian royal documents for the first certain time in 1215. In 1222, seven years after Enrique's accession, new billon struck by Fernando is mentioned in the documents. Surely this is more than coincidence. It seems very probable that Enrique, acting on the Leonese model, sold the crown's right to strike billon for seven years either on the occasion of his acclamation or soon thereafter.

Enrique's government, however, did not cede the crown's right to mint gold. There are gold morabetinos that bear dates corresponding to his reign, which is perfectly consistent with what we know of the development of the moneda institution in Iberia. When Afonso III of Portugal sold his right to strike billon coin in 1261 he specifically retained his

same as the cut of the dinero to the mark. Beltrán makes no account for the added premium the dinero should carry over its intrinsic silver content. This premium undoubtedly shifted depending on the supply of coins.

- 59 O'Callaghan (above, n. 39), p. 1524.
- 60 Bisson (above, n. 46), p. 31.



right to mint gold whenever he wanted.⁶¹ Gold was not the money of daily transactions; debasement of it was easy to detect, which was not the case with billon; and if it decreased in fineness, it simply would command less in terms of the stable billon coin.

Fernando III assumed the crown of Castile in July of 1217 and, in 1230, he inherited Leon and united the two kingdoms. In the first three years of his reign, Fernando probably held a cortes at least twice; once when he was acclaimed king, and once in late November 1219, on the occasion of his being knighted and his marriage to Beatrice of Swabia. 62 In one of his early fiscal acts, December 21, 1219, Fernando granted the convent of Las Huelgas the right to collect the moneda tax in certain of its villages "since the king declared his moneda in his kingdom." By this phrase, the charter testifies that a moneda levy had been decreed and further implies that the crown had not yet collected it from the named villages of Las Huelgas. We might at first assume that the moneda levy to which Fernando refers had been recently declared, perhaps at one of these two cortes. Yet, in a copy of a royal charter dated three years later, September 1222, the king speaks of a sum of morabetinos that should be paid "in dineros of new money that I have made at 90 dineros to the morabetino."64 If Fernando had levied a moneda, it appears odd that he shortly thereafter issued a new coin. The new billon that Fernando III struck was issued seven years after the accession of the short-lived Enrique I and may reflect the expiration of a conservation period reckoned from the start of Enrique's reign. Fernan-



⁶¹ See above p. 148; in 1192, Alfonso VIII had granted to the archbishop of Toledo a tenth of the profits from money made in Toledo excepting gold, further evidence that gold was treated as a separate matter, *Alfonso VIII*, vol. 3, pp. 77-78, 606.

⁶² For the evidence pertaining to these two assemblies, see O'Callaghan (above, n. 39), pp. 1525-26; cf. the documents in *Fernando III*, vol. 2, pp. 114-22, which support the account of the chronicles.

^{63 &}quot;Concedo monetam vestrarum villarum...quod cum rex monetam suam per regnum suum adixerit," Fernando III, vol. 2, p. 120, 98; González, in his commentary, mistakenly gives the date as February 21 (see vol. 1, p. 497).

This charter survives only in copies, the earliest of which is from the sixteenth century. It bears an era date corresponding to September 1222, and González feels that it was probably written "around September 1221"; but, I can find no reason to dispute the date given in the document itself. Fernando III, vol. 2, p. 174, 144.

do's new coin was declared to be worth 90 to the morabetino, the same value given the burgalés in the treaties of 1218. That Fernando struck to the standard of the burgalés was probably an economic decision—it was cheaper than making pepiones. It is not certain how much silver was in the new coins, but if Fernando skimped on silver it was probably not by much, and there are no signs that his dinero was valued any differently than the burgalés of Alfonso VIII.

In 1225, when granting exemptions to the men of Lences, Fernando reserved his right to moneda, but did not imply that it was owed him at the moment. Did Fernando wait another seven years before again choosing to mint or sell? Gil Farrés does not mention the reference to new money in 1222, but rather cites a document of 1228 that refers to new money at the rate of 90 dineros to the morabetino. If such a document does indeed exists, it does not appear among the royal diplomas that González published nor can I find reference to it anywhere else. There is a document from the close of the year 1228, on December 7, that refers to counterfeiting. It states that Fernando gave to the hostel of Burgos (hospitali meo de Burgos) property that Gonzalo of Sepulveda had held but which was confiscated from him because he had counterfeited the king's money (quia falsavit monetam meam).

Although it is clear that Fernando minted dineros at least once before 1230, there are no surviving billon coins that bear the name Fernando, King of Castile. What was the "new money" of Fernando III? The problem is best approached by examining Fernando's policy toward the gold morabetino. Several charters from the mozarabic merchants of Toledo dated 1223-24 refer to morabetinos alfonsin which have "now been issued by the mint of Toledo." Another of 1224 speaks of morabetinos from the mint at Segovia but it is not as clear that they were newly issued.⁶⁷ Fernando clearly struck morabetinos but there are no surviving gold pieces identifiable as his. There are morabetinos that are



⁶⁵ Fernando 111, vol. 2, pp. 242-43, 201; Procter (above, n. 52), pp. 82-83.

⁶⁶ Historia, p. 328; Fernando III, vol. 2, pp. 282-83, 242. There is a similar document concerning a counterfeiter in 1231 and an earlier one from Leon in 1220, but these dates do not correspond with the seven year cycles. Fernando III, vol. 1, p. 467.

⁶⁷ González Palencia (above, n. 13), p. 76, 472; pp. 77-79, 475-77.

dates corresponding to 1216 and 1217. These were evidently issued under Enrique I, who immobilized his father's type, changing only the date. That the documents of Fernando's time refer to the new coins as alfonsins suggests that they still bore the name Alfonso and that Fernando, too, continued to use the alfonsin type. The mint probably took advantage of old dies and struck an issue indistinguishable from those that came before it. The type, including the date, was now immobilized. Maintaining the old type was easy and helped reassure the populace that no change had occurred in the coin. Indeed, most of the successful large denomination gold pieces of the Middle Ages maintained not only an integrity in weight and alloy, but an unvarying type as well. 99

That this was the case with the morabetino alfonsin is strongly supported by a later reference from the time of Alfonso X. In 1258, the cathedral chapter of Valladolid paid off in full a debt to two Florentine merchants. The sum paid was "trecentos marabottinos alfonsinos aureos novos boni et puri auri et quinquaginta marabottinos in denariis usualis monete."70 There are no specimens of morabetinos that can be attributed through date or style to Alfonso X. It seems clear that the morabetino alfonsin continued to be issued in an immobilized form after 1217. Perhaps the issues were only sporadic and in limited quantities. There is diplomatic evidence indicating that Fernando at some point issued a gold dobla, though no specimens are known. There are two types of alfonsin doblas known. It seems reasonably certain that one belongs to Alfonso X, though it is conceivable that both belong to Alfonso XI. Nevertheless, royal decrees from Portugal in 1253 and Castile in 1268 still considered the gold morabetino alfonsin a coin in circulation.71

⁶⁸ Historia, pp. 322-23; Beltrán (above, n. 8), p. 61.

⁶⁹ Cipolla (above, n. 12), pp. 24-25, n. 29.

⁷⁰ M. M. Villalobos and J. S. Nieto, *Documentos de la iglesia colegial de Santa María la Mayor* (hoy metropolitana) de Valladolid...siglo XII (1201-1280) (Valladolid, 1920), p. 331, 56.

⁷¹ Portugaliae Monumenta, vol. 1, p. 192; Cortes de los antiguos reinos de León y Castilla, vol. 1 (Madrid, 1861), p. 64 (hereafter, Cortes de los antiguos reinos); though

Assuming Fernando maintained his grandfather's type with respect to the morabetino, the nature of his so-called "new dinero" becomes evident. The dinero Fernando called new in 1222 officially circulated at the same rate as the burgalés. Since there is no surviving billon attributable to Fernando (or Enrique), Fernando must have used an alfonsin type. The new dinero not only was the same in legal value as the burgalés, but the same in appearance as well. Again, if the coin looked no different, it would help assure the populace that it was indeed unchanged. Fernando's money was "new" only in the sense that it was freshly minted.

Other than the treaties of 1218, the term burgalés appears infrequently in the documents of Fernando's reign. A document from Toledo dated 1219 records a sums of 600 gold morabetinos and 1500 "morabetinatas denariorum Burgensis monete, septem solidos et dimidio pro quolibet morabetino." Gil Farrés cites a document from 1244 that refers to burgaleses at 7.5 sueldos to the morabetino. The price edicts promulgated by Afonso III of Portugal in 1253 mention the "denarius burgalensis." And in 1282, Sancho IV, recalling the coinage of his grandfather, affirms that both burgaleses and pepiones circulated in Fernando's time. Generally, however, in Castilian documents from ca. 1220 to 1264, twelve years after Fernando's death, sums are expressed simply in morabetinos or in sueldos of pepiones. One suspects that

the materials are at times obscure, there is, to my knowledge, no firm diplomatic evidence that Alfonso X issued a gold dobla. See Vives (above, n. 13), p. 21; F. Mateu y Llopis, *La moneda española* (Barcelona, 1946), pp. 167-70; Balaguer (above, n. 12), p. 330; Beltrán (above, n. 7), pp. 642-43.



⁷² Whether the burgaleses under Fernando III and Alfonso VIII were all actually minted in Burgos is far from clear. The name may have come from a type that originated in Burgos but was subsequently struck elsewhere. A document of 1222 refers to "denariis segobiensis" but it is not clear that they were new or what their value was. See Fernando III, vol. 1, p. 467.

⁷³ Fernando III, vol. 1, pp. 461-62.

⁷⁴ Historia, p. 328; Portugaliae Monumenta, p. 192; Sancho IV's charter from Cuellar in 1282 appears in Argüello (above, n. 44), pp. 40–41, 57, and also Memorial historico español, vol. 2 (Madrid, 1888), pp. 78–80; see also Argüello (above, n. 44), pp. 27–37. Several of the mozarabic documents from Toledo in the early 1220s give equivalencies such as "250 mizcales of gold alfonsins, at 15 dineros' to each mizcal."

payments were frequently made in mixed denominations of billon and often partially in kind. Rather than recording a sum as two sueldos pepiones and one sueldo burgalés, it may have been customary to express it simply as four sueldos pepiones. Perhaps the pepiones did outnumber the burgaleses in circulation. There is no evidence after the 1220s that Fernando issued more coins comparable to the burgalés. At the same time, it is clear from several documents that the pepión, since it was half the burgalés, also came to be called meaja.⁷⁶

Upon becoming king of Leon in 1230, Fernando pursued a similar policy of maintaining the status quo. He did not unify the coinage of the two kingdoms, but rather allowed the dinero of Leon, the leonés, to stay in circulation alongside the Castilian burgalés and pepión.

Whether the leonés had remained stable since 1202 when Alfonso IX sold the right to strike it is not clear. The rate in 1217 was 96 dineros to the morabetino. González refers to "moneta nova" in 1223, 21 years after Benevente. A citation from 1229, toward the close of Alfonso IX's reign, shows the dinero still at 96 to the morabetino. It continues to appear at this rate throughout Fernando's time as king of Leon from 1230–52.76 At the same time it seems that either Alfonso IX or Fernando III did away with the coinage of Santiago, for it disappears from the documents.

The word translated from the Arabic by Palencia as "dineros" literally translates as "dinars," which usually signified Islamic gold. In this case, however, it is almost certainly referring to a silver dirham, either Islamic or perhaps a Christian imitation. In 1222 the gold morabetino was equal to 90 burgaleses, therefore, each of these dirhams was equivalent to 6 burgaleses or 12 pepiones. Gonzáles Palencia (above, n. 13), vol. 2, pp. 77-79, 476-77; for Islamic silver in general, see *Historia*, pp. 176, 179-98; for Christian imitations of the dirham, see Balaguer (above, n. 12), pp. 322-23.

The price for a free man or woman to enter the public baths in the early versions of the Cuenca fuero is set at an obulum in the Latin versions and a meaja in the romance versions; the fuero of Heznatoraf, redacted probably in the 1240s, expresses it as a pepión; Fuero de Cuenca (above, n. 21), pp. 156-57. Berceo, who lived during the reign of Fernando III, also calls the pepión a meaja, "Sant Millan," from Obras completas de Gonzalo de Berceo (Logroño, 1974), p. 183, ll. 423-24.

⁷⁶ Alfonso IX, vol. 1, p. 298; Fernando III, vol. 1, p. 463, n. 12; for examples of the morabetino still counted at eight sueldos leoneses in the reign of Fernando III, see the numerous documents quoted by Beltrán (above, n. 8), pt. 2, pp. 7-8.



It is not surprising that Leon and Castile minted at slightly different standards when they were separate kingdoms. It is only slightly more remarkable that Fernando III allowed two unequal dineros to circulate within his united realm as, in general, the unity that Fernando imposed was nominal. His preoccupation with the reconquest allowed little time for internal reform, and the two kingdoms retained much of their individual identity under his rule.⁷⁷

Maintaining separate coinages may have served a practical purpose. There are references to moneda, whether approved by an assembly of the cortes or not, in 1230, 1244, and 1245. Fernando came to the Leonese throne in 1230, 28 years after the cortes of Benevente. Either because a seven year interval had coincidentally ended, or because there was uneasiness about what Fernando's rule would bring, the towns of Leon may have offered their new king a moneda that year in exchange for his leaving the coinage alone. Introducing a new, stronger coin, though naturally not as feared as debasement, was nonetheless frowned upon. This meant that there was little cause for Fernando to insist on the acceptance of the stronger burgalés in Leon, especially if he had to forfeit an immediate cash payment. The promise of additional subsidies would have been good reason for Fernando to treat the billon of Leon as a separate entity, just as the rulers of the crown of Aragon maintained separate dineros for Aragon and Catalonia.

77 The task of unifying Castile and Leon institutionally was not taken up with any firm resolve until the reign of Alfonso X. See R. A. McDonald, "Law and Politics: Alfonso's Program of Political Reform," pp. 150-202, and J. F. O'Callaghan, "Paths to Ruin," The Worlds of Alfonso the Learned and James the Conqueror, R. I. Burns, ed. (Princeton, 1985), pp. 52-53.

⁷⁸ O'Callaghan (above, n. 39), pp. 1519–20 and 1526–27; Procter (above, n. 52), p. 186. Though it cannot be shown for these years, it seems evident from the reign of Alfonso X onward that the king was allowed to collect moneda upon ascending the throne and then every seven years, counted from that date. Thus, there is reason to suspect that Fernando was offered such a levy in Leon in 1230. For Alfonso X, see below, pp. 161–62; J. F. O'Callaghan, "Las cortes de Castilla y León (1230-1350)," Las cortes de Castilla y León en la edad media (Valladolid, 1988), p. 173.

⁷⁰ See for example, Celestine III's reprimand of Alfonso II of Aragon for his manipulation. He demanded that the king renew his promise to hold the coinage inviolate, and to neither weaken nor strengthen it. Bisson (above, n. 46), p. 85; cf. the case of Afonso III of Portugal above, pp. 148–50 and Alfonso X's oath at Jerez, below, pp. 162–63.

⁸⁰ Bisson, pp. 74-104 and 112-19.



There is no documentary evidence that Fernando III issued new dineros in either Leon or Castile after 1230. It is clear that the leonés still circulated during his reign and individually was worth less than the burgalés. This provides a simple argument against assigning the FREX coinage to Fernando III, though polemists of the issue have ignored it.81 The F REX coin reads F REX CASTELLE ET LEGIONIS. If it was issued by Fernando III after 1230, was it intended as a burgalés or leonés? How was one to distinguish? It seems more plausible that the way the newly united Castile-Leon maintained separate coinages at different values was to keep one clearly identifiable with Leon and the other clearly identifiable with Castile. This would have been easily achieved by leaving both coins as they were before 1230. Possibly the supply of coin was replenished by issuing immobilized types, but there is no documentary evidence for this. Fernando appears never to have issued a coin in his own name as king of Castile; there is little reason to assume that he would have later issued a coin proclaiming him king of Castile and Leon that would only serve to compound an already complex monetary system.

The apparently stable rate between the billon coins and the morabetino in these years requires qualification. The Treaty of Toro clearly states that, in 1218, 90 burgaleses or 180 pepiones were equivalent to one gold morabetino alfonsin. A document from Toledo in 1222 speaks of 180 pepiones for each piece of gold, presumably a morabetino. At some point after 1222, however, the price of gold started to fluctuate. Thirty-one years later, a Portuguese decree of 1253 implies that the gold morabetino alfonsin was worth 112.5 burgaleses, while Castilian documents continue to refer to 180 pepiones or 90 burgaleses to the morabetino. In the latter documents, the morabetino has been transformed into a unit of account. Regardless of the real value of the physical gold morabetino in terms of billon coin, the morabetino of account represented a fixed 180 pepiones or 90 burgaleses.⁸²

⁸¹ For a summary of the debate over the FREX coinage, see Metcalf (above, n. 5), pp. 88-92.

⁸² Alfonso IX, vol. 2, p. 479, 366; J. Gautier Dalché, "Remarques sur les premières mutations monétaires d'Alphonse X de Castille," Mélanges en l'honneur d'Étienne Fournial (St. Étienne, 1978), p. 150, n. 17; Portugaliae Monumenta, p. 192; Beltrán

The transition to this fixed ratio was helped by the fact that the physical gold morabetino was undoubtedly becoming scarcer. The new Almohad gold pieces had uprooted the morabetino's hegemony in the peninsula as a whole. Though the Castilian crown continued to strike the morabetino alfonsin and Afonso III of Portugal in 1261 made provision to mint morabetinos in the future, the piece probably was struck in decreasing numbers as the Almohad pieces became more available and were even imitated by Christians.

Similarly, in Leon, the sum of 96 leoneses was adopted as a morabetino of account. From 1217 on, the rate of 96 dineros per morabetino appears in the documents, though by 1253 the morabetino alfonsin was actually worth 120 leoneses. The earliest references of 1217 and 1221 do not specify that 96 leoneses equalled a gold morabetino of Leon at that time. If the gold morabetino of Leon had in fact been debased during Fernando II's reign, a ghost morabetino of account might have been adopted as a result. This seems to have been the case in Portugal, where the morabetino of account was called the "old morabetino" and represented 27 sueldos and there was also a "new morabetino of gold worth 22 sueldos" in 1253.83 In any case, the Leonese morabetino of account apparently remained in close parity with the Castilian morabetino of account.84 The two units were sufficiently equal for a document of 1252 to decree "que se fagan eguales las compras de los maravedís leonenses a los maravedís de Castiella."85

(above, n. 8), p. 65. Literally, the Portuguese decree equates the morabetino alfonsin with 120 leoneses and 102.8 burgaleses. But it seems to have overvalued the burgalés, see below, n. 98; On the adoption of the ghost morabetino, cf. Gautier Dalché, pp. 150-51; for the Castilian morabetino of account in the documents, see n. 74.

- ⁸³ Portugaliae Monumenta, vol. 1, p. 192; compare the document of 1261 where the "old morabetino" appears again as 27 sueldos, though it seems to be eclipsed by the practice of measuring denarii in pounds, p. 211.
- ⁸⁴ For a more detailed discussion of the morabetino of account and other moneys of account, see J. Todesca, "Moneys of Account and Circulating Coins in Castile-Leon, ca. 1085–1300," *Problems of Medieval Coinage in the Iberian Area* 3 (Santarém, forthcoming).
- ⁸⁵ Fernando III, vol. 1, p. 463. The price ceilings set for Castile-Leon by Alfonso X at the cortes of 1252 and 1258 are expressed in morabetinos but no distinction is made between a morabetino of Castile and one of Leon; they must have been consi-



The apparent use of immobilized types by Fernando III in Castile in the 1220s in conjunction with references to the moneda tax indicates an attempt to establish a stable coinage. During his subsequent rule over a unified Castile-Leon, references to the moneda tax continue to appear. Though it was becoming a customary levy, this tax must have been collected under the pretence that coinage was being maintained. Indeed, thirty years after his death, his grandson was asked by the men of the realm assembled at Valladolid to restore to them "the money of the burgaleses and the leoneses and the pepiones and the salamanqueses as they were accustomed to have them in the time of King Alfonso [IX] my great grandfather and King Fernando [III] my grandfather." This currency, then, was held up as a model of strength and stability, a coinage that men later sought to have restored.

THE REIGN OF ALFONSO X (1252–84)

By all outward appearances, the coinages of Castile and Leon remained stable from the opening decades of the thirteenth century to 1252. Furthermore, despite the claims of the so-called "Chronicle of Alfonso X," written some 40 or 50 years after his death,⁸⁷ there is no indication from contemporary sources that Alfonso X (1252–84) made any changes in the coinage until roughly 1264, when the rebellion of the mudejars broke out in Andalucia. References to the common billon of the kingdom are rare in the years between 1252 and 1264. The price ceilings established

dered equivalent values. For the cortes of 1252, see the recent edition of the ordinances by Procter (above, n. 52), pp. 273-84, and Argüello (above, n. 44), pp. 29-34; for 1258, Cortes de los antiguos reinos, vol. 1, pp. 54-63, and O'Callaghan (above, n. 77), esp. pp. 43-44, n. 8.

- Arguello (above, n. 44), pp. 40-41; *Historia*, p. 340; there are references contemporary to Fernando's reign that refer to the money of Salamanca; however, there is nothing to indicate that the salamanqués was of a different value than the leonés, *Fernando III*, vol. 1, p. 464, n. 20; p. 467, n. 37.
- 87 "Crónica de Alfonso X," (above, n. 3), p. 4, see Gautier Dalché (above, n. 82), p. 147, and J. F. O'Callaghan, "The Cortes and Royal Taxation during the Reign of Alfonso X of Castile," *Traditio* 27 (1971), pp. 382 and 387. J. Gautier Dalché's "La politique monétaire d'Alphonse X," *Cuadernos de historia de espanā* (1988), pp. 77-95, appeared while this article was in press and agrees in many ways with what follows.



by the cortes of Seville in 1252 are expressed simply in morabetinos. Those set by the cortes of 1258 are likewise expressed in morabetinos with an occasional sum rendered in pepiones. In Leonese documents, mention can be found of the leonés during these years. The freezes instituted at the cortes of 1252 and 1258 affirm that inflation was still a problem in Castile-Leon. It had perhaps been aggravated by a shortage of manpower brought on by rapid territorial expansion under Fernando III.⁸⁸ If the monarchy was truly committed to preserving the fineness of the dinero, it was less and less profitable to mint new coins as prices rose and the supply of billon may have been allowed to diminish.

On February 6, 1260, Alfonso confirmed for the knights of Toledo their exemption from moneda and extended the privilege to the mozarabic knights of the same city. The king noted that when he initially granted this privilege, the knights owed the crown "a double moneda; one which they had to give us by right because the time had arrived, and the other for help in the business of the empire."89 Despite their exempt status, they had paid this double moneda and now Alfonso was confirming their privilege. Alfonso had been elected Holy Roman Emperor in 1257. His attempt to secure that title severely taxed his financial resources for the next several years. More than likely, the double moneda had been permitted by the cortes of Valladolid in 1258.90 What is important to note in the charter to Toledo is that Alfonso saw the one moneda as a regular tax. He concluded his charter of exemption by assuring the "other men of Toledo" who had paid the double moneda that in the future they would be required to pay only one moneda "at its time, as it is both law and custom." Clearly the moneda had become a customary tax. Since one was due in 1259, we can presume Alfonso had initially collected it seven years earlier in



⁸⁸ Cortes of 1252 and 1258, see n. 85 above; for the leonés, see Beltrán (above, n. 8), pt. 2, p. 8; on inflation, see T. F. Ruiz, "Expansion et changement; la conquête de Séville et la société Castillane (1248–1350)," Annales: économies, sociétés, civilisations 34 (1979), pp. 550–53.

⁸⁰ A. Ballesteros Beretta, *Alfonso X el Sabio*, 2nd ed. (Barcelona, 1984), pp. 226-28.

O'Callaghan (above, n. 87), pp. 382-83; Procter (above, n. 52), p. 189.

⁹¹ Ballesteros (above, n. 89), p. 228.

1252, upon becoming king. At some point the idea of king and people mutually agreeing to the moneda, as was the case in 1202 (and in 1254 in Portugal), had disappeared in Castile-Leon. The king no longer had to forego a moneda if he wanted to mint. He now could collect the tax regularly and probably minted when he saw fit. Undoubtedly, there was still an implicit obligation to maintain the coinage.

It seems safe to disregard the royal chronicler's assertion that in 1258 the king stopped minting the burgalés and issued a stronger coin, the prieto. In Castile, the contemporary documents make no reference to a new coinage in these years nor is there any sign that the king's levy of moneda in 1259 was considered unjust. Rather, he was granted a double moneda and the knights of Toledo did not insist on their exemption. There is clear evidence that Alfonso had recently reissued the immobilized morabetino alfonsin in 1258 and, in terms of gold, was thus upholding the status quo. The royal chronicle's report that the dineros prietos were issued in 1258 must be a confused allusion to the coins of that name which played a conspicuous role in the later part of Alfonso's reign.

Between 1264 and 1268, Alfonso was occupied with a rebellion of the mudejar population of Andalucia as well as a war with Granada. At the cortes of Jerez, summoned after peace had been restored in 1268, Alfonso pledged for life to neither increase nor diminish the weight or fineness of "the dineros alfonsis which I ordered to be made after the war began." Subsequent documents make it clear that the new coins, commonly called "moneda de la guerra" or "blancas," were counted at 90 dineros to the morabetino as the burgaleses had been.

- 98 "Crónica de Alfonso X" (above, n. 87), p. 7.
- ⁸⁴ See above, p. 154.
- ⁹⁵ Alfonso swore, "que la [moneda] non creciese nin menguase nin enla ley nin en [la] talla que agora es," Cortes de los antiguos reinos, vol. 1, p. 64, 1.
- **Cortes de los antiguos reinos, vol. 1, p. 69-78, "dineros alfonsis" appears to be the official name of the new coin. Though used in the wage and price edicts of the cortes of 1268, it seldom appears in other documents: "morabetinos alfonsis at 7.5 sueldos of



⁹² If moneda was ever levied at separate times in Castile and Leon during Fernando III's reign, it was perhaps uniformly collected in 1252. The cortes of 1252 was attended by both Castilian and Leonese towns as were the cortes of 1258 and 1259, Procter (above, n. 52), pp. 125-29.

The remainder of the legislation promulgated at Jerez attempted to fix prices as well as wages in Castile-Leon. Prices were set for the mark of silver and the quintal (200 marks) of copper, tin, lead, and iron. This section on the price of metals closely parallels the decrees promulgated in Portugal in 1253 (though the surviving ordinances from the earlier Castilian assemblies of 1261, 1258, 1252, and 1207 treated these matters differently). 97 The Portuguese decree valued the mark of silver (marcha argenti) at twelve pounds or 2,880 Portuguese dineros. It further decreed that the dinero of Leon was equivalent to three Portuguese dineros. Therefore, the same mark of silver was worth 960 leoneses or ten Leonese morabetinos of account. Since 96 leoneses were equivalent to 90 burgaleses, the mark was worth 900 burgaleses or ten Castilian morabetinos of account.98 The decree from Jerez valued the mark of fine silver (marca dela plata fina) at 15 morabetinos of account or 1,350 dineros, stipulating that all metal which had silver in it was to be sold according to this rate. 99 The coin of the Jerez decree is undoubtedly the "blanca" which Alfonso had just confirmed. It commanded significantly less purchasing power than the leonés and burgalés had some vears earlier.

dineros alfonsis to the morabetino," 1269, Los Cartularios de Toledo (Madrid, 1985), pp. 446-47, 504; "moravedis de los de la primera guerra que yo de vos recibi en dineros contados a vii sueldos e medio cada moravedi," 1282, Colección diplomática Calceatense Archivo Catedral (años 1125-1397), C. López de Silanes and E. Sainz Ripa, eds. (Logroño, 1985), p. 85, 50.

- ⁹⁷ Cortes de los antiguos reinos, vol. 1, pp. 64-65, 2; Portugaliae Monumenta, p. 192; for the cortes of 1261, see M. Rodrígues Diez, Historia de la ciudad de Astorga, 2nd ed. (Astorga, 1909), pp. 715-20.
- The Portuguese decree states that the leonés equaled three dineros portugeses while the burgalés was worth 3.5 dineros portugueses. According to this, one leonés was 6/7 of a burgalés or 96 leoneses were equivalent to 82.3 burgaleses. However, this goes against all indications that the Leonese and the Castilian morabetinos of account were equal, i.e., that 96 equalled 90. The leonés appears rather frequently in Portugal at this time, and we can assume that its value was familiar to the Portuguese. It seems reasonable to conclude that the Portuguese royal decree would be accurate in equating the leoneses to three dineros portugueses. But it must have approximated the burgalés, overvaluing it at 3.5 portugueses, perhaps due to less familiarity with the coin, Portugaliae Monumenta, p. 192; for leoneses circulating in Portugal, see the royal letter of 1261, Portugaliae Monumenta, p. 211; see also Mateu y Llopis (above, n. 71), pp. 116–17; Beltrán (above, n. 8), pp. 65–66.
 - Cortes de los antiguos reinos, vol. 1, p. 64, 2.



At the cortes of Valladolid in 1282, the rebellious Sancho was asked to restore the coinage to the standard before his father's time. Although he never carried out the reform, in a charter sent to the consejo of Burgos after the cortes, he outlined plans for the restoration of the burgalés. He declared that the blanca should be called in at the rate of "eighteen dineros of the moneda blanca... for twelve of the new burgaleses." This is a rate of three blancas for two burgaleses. The Jerez decree of 1268 valued a mark of silver at 1,350 blancas while the Portuguese decree of 1253 indicated that the mark of silver was worth 900 burgaleses. Apparently 1,350 blancas were equivalent to 900 burgaleses, a ratio of 3 to 2. This is precisely the equivalency that Sancho later thought correct.

Alfonso's obligation to maintain the coinage, which he had implicitly renewed by collecting the moneda tax in 1259, would have expired by 1266. He may have scrupulously waited until then to issue the new money, or, pressed by the expenditures of the war and the cessation of Granada's gold tribute, the king may have broken his pledge and issued the debased coinage sooner. Whichever was the case, the assembled cortes at Jerez treated it as no minor matter. Perhaps inspired by the precedent of the Portuguese cortes in 1261 or by custom in Catalonia, they insisted that the king swear to maintain the coinage for life. 101

The king's oath at Jerez was a silent recognition that the blanca was debased, a fact he had probably hoped to conceal. The king promised not to further diminish the coin in weight or fineness. Though the cortes did not make provision for future issues to be assayed, as did the Portuguese cortes of 1261,¹⁰² we can assume that they were reasonably



¹⁰⁰ Argüello (above, n. 44) pp. 40-41, 57; cf. Gautier Dalché (above, n. 82), p. 150.

¹⁰¹ The king of Granada's tribute appears to have been 150,000 morabetinos per annum. After the war, that tribute may have been raised to 250,000 morabetinos. See Fernando 111, vol. 1, p. 501, and M. Ladero Quesada, "Las transformaciones de la fiscalidad regia Castellano-Leonesa en la segunda mitad del siglo XIII (1252-1312)," Historia de la hacienda española, p. 362. Much of this income was undoubtedly going to secure the title of Holy Roman Emperor for Alfonso X. His expenditure in that regard left the king hard pressed to meet the expense of the war, J. F. O'Callaghan (above, n. 16), pp. 362-66; for the oath to maintain the coinage for life in Aragon-Catalonia, see Bisson (above, n. 46), pp. 112-19.

¹⁰² Portugaliae Monumenta, p. 211.

aware of the true fineness of the blanca. The prices set by the cortes of 1268 are expressed in morabetinos, dineros alfonsis, i.e., blancas, and also sueldos of pepiones. Generally, when prices and wages apply specifically to Andalucia and are not expressed as morabetinos, they are rendered in pepiones, whereas the corresponding prices for Castile, Leon, and Extremadura are in dineros alfonsis. But there are exceptions to this. The "best pair of partridges" was worth "in Andalucia and in Extremadura ten pepiones and in Castile and in the land of Leon ten dineros alfonsis." The assembly, then, anticipated that at least the pepión, and perhaps the burgalés, would continue to circulate regionally. In imposing uniform weights and measures, it was declared that those found guilty of giving false measure, should pay 60 sueldos "of the money which was in the land." 104

The older coinage may have been retariffed so that new and old were put in parity, but there is no mention of it in the ordinances. Rather, the cortes probably agreed to recognize the blanca as the legal equivalent of the burgalés and as twice the pepión. ¹⁰⁵ This assured that the old money would vanish, which it unmistakably does. After 1269, the old coins are not mentioned in the sources. ¹⁰⁶ Sancho's promise to restore the burgalés, pepión, as well as the leonés, supports the conclusion that the old coins had fallen out of circulation during his father's



¹⁰³ Cortes de los antiguos reinos, p. 73, 18, see also pp. 73-74, 19-20.

¹⁰⁴ Cortes de los antiguos reinos, p. 76, 26.

¹⁰⁵ It is clear that wages were intended to be higher in the south. A young man (mancebo) was allowed a higher yearly wage, expressed in morabetinos, in Andalucia than in any other region. When daily wages are given in billon it cannot be determined what the relation between pepiones and blancas was intended to be. For example, women and children at harvest time were to receive a daily wage of one sueldo of pepiones in Andalucia. In other areas they were paid three blancas daily. In proper parity, four pepiones (two burgaleses) equalled three blancas. If a blanca was held as equal to the burgales, two pepiones equalled one blanca. Regardless of which rate is substituted, the Andalucian women and children received a higher wage, Cortes de los antiquos reinos, pp. 77-78, 32-33.

¹⁰⁶ The latest reference I have found to leoneses is in 1267, noted as "buenos dineros leoneses," Escalona (above, n. 52), p. 613; for the burgaleses, there is a document from September 1269 that records the sum of "xxx morabetinos de burgaleses," Documentos del monasterio de Villaverde de Sandoval (siglos XII-XV), G. Castan Lanaspa, ed. (Salamanca, 1981), pp. 134-35, 79.

reign. The disappearance of the burgaleses, leoneses, and pepiones would have been all the more rapid if their number had been allowed to dwindle. As mentioned above, there is no indication that Fernando III had regularly struck these coins. Hence, the so-called moneda de la guerra, or blanca, superceded the older coinages both in Castile and Leon. In Castile the morabetino of account after 1268 consisted of 90 blancas. In Leon, the custom of counting 96 coins to the morabetino continued. Since Leon now used the same coin as Castile, this created a slightly larger unit of account, which would later be called the morabetino longo.¹⁰⁷

After the uprising of 1264, a large part of the mudejar population was expelled from Andalucia, increasing the shortage of manpower and further aggravating inflation in the kingdom. 108 Real as this economic crisis was, Alfonso's debasement must be kept in mind when trying to gauge the extent of the inflation. Though those receiving fixed rents would have genuinely received less silver if paid in the new moneda de la guerra, the general effect of this debasement was to drive up prices artificially. 109 This can be illustrated by following the price of gold. The 1253 decree from Portugal had valued the alfonsin gold morabetino at 120 leoneses. The price in Castile at that time, then, should have been 112.5 burgaleses for the gold morabetino. The 1268 decree of Jerez states that the alfonsin gold morabetino was worth two morabetinos of account, or 180 dineros. But these were blancas. If the blancas were related to the burgaleses at a rate of 3 to 2, 180 blancas equaled 120 burgaleses. Thus, in 1268, the price of gold had gone up a little since 1253 (from 112.5 to 120 burgaleses), but nowhere near as dramatically as is indicated at first glance. The cortes of 1268 sought to minimize the rise in prices by again instituting price ceilings. Such a policy could only heighten a growing discontent within the kingdom. 110



^{107 &}quot;Por quince morabetinos della moneta della primera guerra a ocho sueldos," 1292, *Documentos...de Villaverde*, p. 137, 81; "morabetinos alfonsis de ocho en sueldo el morabetino de la moneda blanca que mando hacer el Rey en la guerra de Granada," 1271, Argüello (above, n. 44), p. 37, 43. See further *Historia*, pp. 334-35; Beltrán (above, n. 8), pt. 2, p. 8;

¹⁰⁸ Ruiz (above, n. 88), pp. 550-52.

¹⁰⁹ Cf. Bisson (above, n. 46), p. 68.

¹¹⁰ Portugaliae Monumenta, p. 192; Cortes de los antiguos reinos, vol. 1, pp. 64-78; O'Callaghan (above, n. 77), pp. 50 and 55. Failure to understand the debasement of

The lifetime monetary oaths of Afonso III of Portugal in 1261 and James I of Aragon to the Catalans in 1258 both limited the king in terms of future minting. If Alfonso X agreed to any such restrictions, they are not mentioned in his pledge of 1268 as it has come down to us. He simply stated that he would neither increase nor diminish the fineness and weight of the coin, implying that he would continue to mint the blanca in the future. By 1271, however, an entirely new coin had appeared. In that year, the dean and chapter of the church of Santa Maria in Cordova purchased four houses:

For 87 and one-half morabetinos of the new money which has a castle on one side and a lion on the other, of which a morabetino is worth as much as four morabetinos of the dineros alfonsis which the king ordered to be made in the war....¹¹¹

The following year, the same chapter purchased two additional houses. This time, they described the payment as being made in "morabetinos de los dineros prietos." Again, the coins are described as having a castle on one side and a lion on the other, and one morabetino of the prietos was equivalent to four morabetinos of the blancas. 112 Clearly, the "new money" in the first document is the same as the "prieto" in the second. Alfonso had issued a new coin of considerable strength.

The name blanca referred to a bleaching process that the coins were subjected to at the mint, presumably to help disguise their baseness. The prieto, literally the "dark coin," was now issued unbleached. The documents make it clear that the prieto was also distinguished by a new design. It is called the "new money" which has a "castle on one side and a lion on the other." There are three types of billon coins that can feasibly belong to Alfonso X. As explained in the introduction, the coin whose obverse bears the legend TLFONSVS REX CTSTELLE ET LEGIONIS (Plate 22, 1-4) and another that carries the legend TLF REX

the blancas has generally caused the inflation of the 1260s to be exaggerated. See in this regard, M. del Carmen Carle, "El precio de la vida en Castilla del rey sabio al emplazado," *Cuadernos de historia de España* 15 (1951), pp. 134-36. Procter (above, n. 52), pp. 215-16, gives a better comparison of prices between 1252 and 1268 but fails to take into account the change in the value of the money.

- ¹¹¹ Argüello (above, n. 44), p. 38, 44, see also p. 37, 42.
- ¹¹² Argüello, p. 38, 46.



CASTELLE on the obverse with ET LEGIONIS on the reverse (Plate 22, 5-8) have been traditionally assigned to this king. Stylistic comparisons allows a safe distinction between these and the older coins of Alfonso VI and Alfonso VII, both of whom also could have issued coins proclaiming themselves king of Castile and Leon. Coins assigned to Alfonso XI are closer in style to those given to Alfonso X, but the devices used as mint marks on them suggest that these coins must have followed the reigns of Sancho IV and Fernando IV. The third coin that must be considered a possible issue of Alfonso X is the anonymous MONETA CASTELLE ET **LEGIONIS** (Plate 22, 9-12). These three coins are all about the same size and are not drastically different in weight. Both the TLF REX coin and the MONETA CASTELLE have a castle on one side and a lion on the other. Either one, then, could be the prieto. This leaves only one choice for the blanca. It has to be the coin that carries on the obverse the legend TLFONSUS REX CTSTELLE ET LEGIONIS with a reverse quartered by castles and lions.

When in 1282 Sancho IV made plans to take the blancas out of circulation, he described them as "la moneda blanca que fue labrada a tres menos pugesa." Medieval mints denoted the fineness of coins by a special use of the term denarius. As the carat was used to indicate the fineness of gold, denarius was applied to silver. If a coin was described as 12 denarii fine, it meant that it was 100 percent silver. A coin at six denarii fine was 50 percent silver and one at three denarii was 25 percent. The denarius was further broken down into pogesatae, four of which equalled one denarius. Thus, Sancho described the blanca as three denarii minus a pogesata or 2 3/4 denarii fine. According to this, the blanca was supposed to be roughly 23 percent silver. Four specimens of the coin we have identified as the blanca were tested for silver content by the use of X-ray fluorescence. The four specimens weighed .86, .83, .92, and .85 g. With a margin of error of ± 3 percent, the coins tested were found to be 23, 19, 18, and 24 percent silver, respectively. The prescrip-

¹¹³ Argüello, p. 41, 57.

¹¹⁴ The X-ray fluorescence referred to here and below was conducted by Giles Carter. For a general description of the methodology, see G. F. Carter and M. M. Booth, "X-Ray Fluorescence Analysis of Copper-Based Coins," *Problems of Medieval Coinage* (above, n. 11), pp. 49–69.

tion of fineness dictated only how the original alloy was to be made. For example, Afonso III of Portugal prescribed in 1261 that his coins should be "made at one denarius, namely that to 11 marks of copper there ought to be mixed (admisceatur) one mark of pure silver."116 Once the alloy was poured and hammered, it could hardly have been exactly uniform throughout. If we keep this in mind, as well as the margin of error of the X-ray fluorescence, there is little reason to doubt that the TLFONSUS REX CTSTELLE ET LEGIONIS coin was the blanca of Alfonso X. There also survive obols of this same coin type. 116 The blanca and its obol were the first coins to circulate uniformly in Castile and Leon since the reunion of the kingdoms under Fernando III. Aesthetically, it was a coin well suited to the task. Its simple obverse declared for the first time on a coin the union of the kingdoms of Castile and Leon, while the reverse portrayed the idea symbolically. Monetarily, however, it was a weak means of exchange in an inflationary economy.

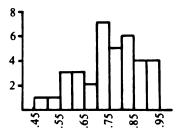


Fig. 1: Weights of ANS Blancas



¹¹⁵ Portugaliae Monumenta, vol. 1, p. 211.

¹¹⁶ There is a heavier coin of finer silver that is identical in type to the blanca and its obol. The two specimens in the ANS trays weigh 1.50 and 1.22 g, but one is holed and the other is broken. Gil Farrés reports one of 1.40 g and the specimen that Heiss included in his plates was said to weigh 1.80 g. This heavier piece appears to be an early attempt at a large denomination silver coin. It relation to the common billon or to other large silver pieces of this era has not been determined. It, however, cannot be confused with the prieto, which had a castle on one side and a lion on the other, see *Historia*, pp. 325 and 330–34; Heiss, p. 38, pl. 5.

All the blancas in the ANS trays were weighed for Figure 1. It appears that the intended legal weight of the blanca may have been somewhere between .70 and .84 g. However, there is good reason to assume that the legal weight was between .70 and .74 and no higher. The cortes of Jerez in 1268 decreed that the mark of fine silver was worth 1,350 blancas. This was intended to govern all sales of silver in the kingdom so it presumably reflected the effective market price. The Castilian mark weighed between 230 and 233 g.117 A coin, by definition, should carry some premium or added value over the intrinsic value of its precious metal. In other words, if one exchanged a mark of silver for 1,350 blancas, those 1,350 blancas should contain less than a mark of silver. To this extent, the ideal weight of the blanca could not have been more than .74 g. With a prescribed fineness of 23 percent silver, a blanca weighing .74 g would ideally contain about .17 g silver, and 1,350 of them would yield 229.5 g silver or, practically speaking, a mark of silver. The intended legal weight of the coin had to be lower than .74 g. But, the frequency table indicates that it could not have been much lower, probably not lower than .70 g. This points to only one conclusion: confidence in the blanca was so weak in 1268 that it carried very little added value if any at all. The person receiving 1,350 blancas for a mark of silver was getting very close to a mark's worth of silver in coin.

With so small an added value, the heavier coins would tend to be culled. By 1268 any 23 percent silver blanca weighing more than .74 g was worth more intrinsically than the face value of the coin. Not all heavy coins necessarily contained as much as 23 percent silver, as the four coins tested by X-ray fluorescence show.

Weight	Silver, $\pm 3\%$	Silver, $\pm .03$ g
.86	23	.19
.83	19	.15
.92	18	.17
.85	24	.20

The person of the thirteenth century, however, would have discriminated by weight and saved the heavier coins, perhaps to melt down when enough were accumulated. Hence the blancas that survive today tend to be heavier than what must have been the intended legal weight.



¹¹⁷ Historia, p. 313; Hamilton (above, n. 48), p. 17, n. 1.

With such a low premium attached to his coin, Alfonso could not possibly afford to mint more of them. The Jerez cortes forbade the export of gold and silver, a clear sign that the government was having difficulty attracting bullion to its mints. The distressful state of the coinage after 1268 is demonstrated in a document nine years later. In May 1277, on behalf of the king, a letter was drafted to the pope, bearing the names of the king's brother, son, and various members of the nobility and clergy:

Lord father, we must make known to you how the good men in the towns of all the land sometime ago asked the favor of our lord, the king, that he make a stronger money than the one which was before...and he took advice and counsel with wise men who understood the business of money and he ordered the dineros prietos made...and swore to keep them fixed (juroles de gelo guardar) and not to make another [money] in his life; and because the money was very strong and needed much silver, he could not make but very few of them.¹¹⁹

The prieto had appeared by 1271 and was worth several times the blanca. The king had been well advised in that a multiple dinero piece was the only logical step. First, it saved him production costs. Second, it seems to have been desired by the people and thus offered an opportunity to restore a premium to the coinage. Because it was less cumbersome, people were apt to accept the prieto as worth several blancas even though it may have contained slightly less silver than the same number of individual blancas. But, for reasons the letter does not explain, the prieto was unsuccessful. The mint did not attract enough silver to continue and hence ceased production. Why?

A new coin allowed a further opportunity for deception. Very quickly after it appeared, there was confusion over the proper value of the prieto. The two documents that record the purchase of property by the clergy of Cordova in 1271 and 1272 state that a morabetino of prietos was equivalent to four morabetinos of the blancas. Obviously, these



¹¹⁸ Cortes de los antiguos reinos, p. 71, 14; gold and silver appear on the list of forbidden exports (cosas vedadas) for the first time in 1268, see O'Callaghan (above, n. 77), pp. 50-51; for the cosas vedadas of 1207, see F. Hernández, (above, n. 3).

¹¹⁰ Argüello (above, n. 44), p. 39, 52; *Historia*, p. 336; Procter (above, n. 52), pp. 141-42; O'Callaghan (above, n. 87), p. 391; O'Callaghan (above, n. 77), pp. 61-62.

refer to units of account. Since in Castile burgaleses and later blancas had been traditionally counted in groups of 90, it is reasonable to assume that the prieto is here grouped in nineties. Hence one prieto was the equivalent of four blancas. However, in 1272 the prior of the Monastery of Oña leased a plot of land for a rent of "four dineros of the prietos or two sueldos of the blancas."120 This is a rate of 1 to 6. In the same year, a rent to the monastery of San Toribio was recorded as "... in rent 37 morabetinos and of the said prietos at five sueldos (to) the morabetino, and if this money falls or increases, you ought to pay us this rent as the said prietos are worth today."121 "At five sueldos to the morabetino" is a phrase that became more common in documents a few years later. If a morabetino of prietos consisted of only 60 prietos (five sueldos) and in turn still equalled four morabetinos or 360 blancas, this would be a rate of 1 to 6. Did the chapter at Cordova simply assume that there were 60 prietos to a morabetino prieto? It seems unlikely. Two charters of the master of Santiago drawn up in August of 1273 again give the equivalency of one morabetino of prietos to four morabetinos of blancas without noting anything unusual about morabetinos of prietos.122

The remaining two coin types attributed to Alfonso X look very much alike. Both have a three towered castle on the obverse and a lion, facing left, on the reverse. Either could be the prieto, described in the documents as having a castle on one side and a lion on the other. The two coins are distinguished mainly by the border around the type. One is lobed while the other is a smooth circle. Less noticeable is the difference in legends. The lobed specimen reads MONETT CTSTELLE ET LEGIONIS, while that with the circle reads TLF REX CTSTELLE ET LEGIONIS. Four specimens of the MONETT CTSTELLE coin were subjected to X-ray fluorescence (Plate 22, 9–12). With a margin of error of ± 3 percent the silver content of all four was between .29 and

¹⁸⁰ J. del Alamo, Colección diplomática de Oña (Madrid, 1950), vol. 2, p. 712, 599.

¹²¹ Cartulario de Santo Toribio de Liébana, L. Sánchez Belda, ed. (Madrid, 1948), p. 207, 184. The expression "si esta moneda baxare o cresiere" is perhaps indicative of the uncertainty over the prieto's worth.

¹²² Colección de documentos para la historia del reino de Murcia, vol. 2, J. Torres Fontes, ed. (Murcia, 1969), pp. 49–52.

.32 g. In the analysis of the final type, the **TLT REX** coin (Plate 22, 5–8), the range of results was slightly larger, indicating silver content of .54, .55, .62, and .65 g. This last type, then, is the only candidate for the prieto. 123 Its specimens have almost four times as much silver as the blancas, which had an average silver content close to .17 g. Four times the blanca is the rate at which the cathedral chapter at Cordova seems to have counted the prieto. With this knowledge, the confusion in the documents is understandable. It seems evident that some parties were only accepting the coin at a rate of one to four with the blanca. The rate of 1 to 6 was surely the official rate declared by the crown and used to pay off its debts. Other parties undoubtedly tried to insist on this rate when it was to their advantage. This time, Alfonso was trapped by his own deception.

This discrepency between the official value and the effective value of the prieto had a minimally disruptive effect on the economy. The blancas continued to circulate. Sancho IV's charter from Cuellar in 1282 testifies that they were still legal currency at that time. 124 By and large, the official value must have been ignored, and the prieto circulated at the equitable rate of 1 to 4 blancas. Even at this rate, the prieto was still a strong coin. With no other coin like it in the peninsula, it would have been popular throughout Iberia and perhaps enjoyed some prestige beyond as well. However, regardless of its popularity on the open market, the king overvalued it by 50 percent. This virtually guaranteed that no bullion or old blancas would flow to the mint in exchange for prietos. The general effect was that the limited number of



¹²³ There is a smaller version of this type, in which the lion on the reverse faces right, thus distinguishing it from the larger coins, Heiss, p. 41, pl. 5, 7. This was almost surely a half-prieto piece and not a separate denomination as Beltrán argued. This parallels the subsequent coronado and half coronado of Sancho IV. There is the same difference in size between the two, as well as a variation of the type. The half prieto, based on its presence in hoards, may not have disappeared as rapidly as the prieto. Only slightly smaller than the full coin, it must have contained a larger proportion of copper, thus making it a less attractive piece for hoarding, see Beltrán (above, n. 8), pt. 2, pp. 10–12.

¹⁸⁴ "Moneda blanquiella de la guerra, que solia correr fasta agora...," Argüello (above, n. 44), p. 41, 57 and 59.

prietos that could be made gradually flowed out of Castile. The letter to the pope continues:

And furthermore, because (the money) was very strong, they took so much of it out of the land that it dwindled and was very scarce, in such a way that the men are very needful of money for purchases and for those things that they need every day.¹²⁵

Alfonso was either unable or unwilling to offer a more competitive price for bullion that would attract silver on the international market. As a result, his own kingdom had been gradually drained of that metal. The crisis of another war, however, demanded that the king supply his realm with ample coin. The Marīnids, the successors to the Almohad empire in North Africa, had allied with Granada against Castile in 1275 and returned again in 1277. 126 It was their renewed hostility that prompted the letter to the pope. It concludes by reporting that the men of the realm had asked the king to issue a "more common" coinage to help meet the expenses of war. The purpose of the letter, then, was to ask the pope to release Alfonso from his oath to maintain the prieto. 127

Whether the petition to Rome was ever sent or whether the pope replied we do not know. Nevertheless, it is implied in the petition that Alfonso had gained the consent of the cortes to alter the prieto. The new money, the seisen, seems to have appeared as early as 1276. This money was again bleached and appropriately called "blanca" or, more ambiguously, "moneda nueva." Alfonso's first coins were now rechristened "blanquillas" or, more frequently, "monedas blancas de la primera guerra" as opposed to this most recent money which was a product of the second war with Granada.

Early examples of the new coin can be found in the mozarabic documents of Toledo. A document of August 1279 quotes the price of "160 morabetinos (mizcales) of sueldos that are current now at 15 sueldos to

¹²⁵ Argüello (above, n. 44), p. 39, 52.

¹²⁶ O'Callaghan (above, n. 16), pp. 375-76.

¹²⁷ Argüello, p. 39, 52.

¹²⁸ Historia, p. 336, and see below, n. 134; the prieto was still sometimes called moneda nueva, as in Alfonso's letter of 1277 to the concejo of Burgos, C. de Ayala Martínez, La monarquía y Burgos durante el reinado de Alfonso X (Madrid, 1984), p. 43, 1.

the morabetino." In 1280, the phrase, "for the price of 160 morabetinos [of] blancos nuevos at 15 sueldos to the morabetino" appears. If we interpret sueldo as a dozen coins then it would seem there were 180 new blancas to a morabetino. But the mozarabic documents are confusing in their terminology, as evidenced by the use of mizcal for morabetino. Later that same year, the documents become more precise, "for the price of 100 morabetinos of 15 dineros blancos to the morabetino." There were 15 of the new coins to the morabetino of account, and 15 new blancas equalled 90 blanquillas of the first war or 1 to 6. The new blanca appears to have been the legal equivalent of the prieto. Presumably, the new coin was also equated with 12 of the old pepiones and for this reason is sometimes refered to as a sueldo in the mozarabic documents.

This new coin was the MONETA CASTELLE. It was almost identical to the prieto in design but X-ray fluorescence analysis indicates that it was roughly half as fine as the prieto. It contained about .31 g silver, whereas the prieto seems to have averaged around .60 g. Thus it was a drastically debased substitute for the prieto. The effect that the new blanca had on the Castilian economy was undoubtedly one of confusion. To some extent, the debasement must have been public knowledge. The cortes had supposedly asked for a more common coinage; plus, the new coin weighed somewhat less than the prieto and was bleached—two obvious signs to the user that something had changed. The prieto quickly disappeared. A record of taxes from Burgos in 1279 shows assessments made in prietos but otherwise they do not seem to be mentioned after 1277.¹³¹

As late as 1283, with Sancho controlling the government, the crown struggled to have the seisén accepted at its stated value. In that year, Sancho wrote to his tax collectors in Murcia, admonishing them for attempting to count the new money as only two-thirds of a prieto, when it should be equivalent to the prieto. This document is significant in a number of respects. The evidence from the mozarabic documents



¹²⁹ González Palencia (above, n. 13), vol. 2, nos. 662 and 667.

¹³⁰ González Palencia, no. 669.

¹⁸¹ Memorial histórico español, vol. 1, p. 341, 153.

¹³² Colección de . . . Murcia (above, n. 122), vol. 4, pp. 11-12, 15.

makes it clear that the blanca's legal value was 1 to 6 with the blanquillas. Sancho's letter to his tax farmers leaves no doubt that the blanca was intended to legally replace the prieto. Crucially, this confirms that the prieto was in fact originally issued at 1 to 6 with the blanquillas. Alfonso never abandoned that legal rate. This is important to bear in mind in that several tax documents from Alfonso's reign show the prieto, or perhaps the blanca, counted as four blanquillas. These must be other cases of overzealous tax collectors attempting to collect at the effective rate. The tax levies of the 1270s appear to have been expressed in blanquillas, but most of the taxes were farmed. If he collected in prietos, insisting on the market rate of one prieto for four blanquillas, the collector could then turn around and pay the government at the advantageous rate of one prieto for six blanquillas. This was naturally resented by the populace and helps explain the

133 The author of the chronicle of Alfonso X, though wrong about the date of introduction of the prieto, did state its official value. Expressing it in terms of the morabetino de la guerra, as was the later custom, he recorded that there were 15 prietos to the morabetino, "Crónica de Alfonso X" (above, n. 3), p. 7.

134 "El que oviesse valia de diez maravedis de los prietos, que diesse diez sueldos de los buenos burgaleses, que se fazen cinco maravedis et tercio de la moneda blanca. Et el que oviesse diez maravedis de los blancos que de diez sueldos de los blancos." Ballesteros reported the date of this as September 1275, but noted the document was badly preserved. In another section it refers to three successive servicios granted to the crown, suggesting that it might date from 1276. The term burgalés cannot here refer to the burgaleses that circulated before the first blancas. The ordinance of Sancho IV from Cuellar in 1282 as well as a later document from Silos (see below, p. 187) make it clear that those burgaleses were valued at 2 to 3 with the blanca. The buenos burgaleses are either the same as the prietos, or they are perhaps the second blancas, introduced because the prietos had become so scarce. "Blanca" appears to be used throughout this passage to refer to the first blancas. A. Ballesteros Beretta, "Burgos y la rebelión del Infante D. Sancho," Boletín de la Real Academia de la Historia 119 (1946), pp. 118-19; Beltrán (above, n. 8), p. 70; O'Callaghan (above, n. 87), p. 396, n. 64; see also Procter (above, n. 52), pp. 191-92; Beltrán cites a document supposedly from the summer of 1276 in which an old tax is commuted at the rate of "un maravedi de la moneda de los burgaleses que vale quatro de los blanquiellos." The use of the term blanquiellos for the first blancas suggests the second blancas had already appeared, Beltrán, p. 70; cf. the clearly corrupt text dated 1279 in Memorial histórico español, vol. 1, p. 341, 153; Sancho IV's coronados are also occasionally called burgaleses, Colección de ... Murcia (above, n. 122), vol. 2, p. 87, 95.



turmoil surrounding Alfonso's collections of the mid 1270s.¹²⁵ This same phenomenon is described in the Murcian document of 1283, where tax farmers attempted to collect at the effective rate and increase their personal profit, not the crown's; hence, Sancho reprimanded them.

The tax farmers of Murcia estimated that the MONETA CASTELLE was worth two-thirds of a prieto, when, in terms of intrinsic value, it was worth barely half. That they did not demand more may reflect a fear of drawing reprisals from the crown, which they did anyway, or perhaps the full extent of the debasement was not widely known. The most puzzling aspect of the new blanca is its effective equivalency with the blanquillas. If the prieto was only accepted as worth four, the new blancas could not have been effectively worth more. There are no clear examples of blancas being exchanged for blanquillas. What seems to have occurred more often is that the two were kept separate in reckoning prices.

We should recall that the original morabetino alfonsin of account was worth 90 dineros, first of burgaleses then of blanquillas. When the prieto was introduced, a separate morabetino of account had been adopted, the morabetino preito, which at first was a unit of 90 prietos. This morabetino preito was accepted as worth four times the morabetino of blanquillas, despite the crown's value of 1 to 6. In an effort to use the crown's rate to their advantage, some parties apparently started to count only 60 prietos to the morabetino prieto. If this was used to discharge a debt of four morabetinos blanquillos, the rate was 1 to 6. This may have worked in some cases, but the general effect must have been to devalue the morabetino prieto, making it worth less than four morabetinos blanquillos. The short life and limited circulation of the prieto seems to have precluded any standard way of counting it.

The blanca, like the prieto, was sometimes grouped as a separate morabetino of 90 coins and occasionally as a morabetino of only 60 coins although this practice does not seem to have been widespread.¹³⁶



¹⁸⁵ For discontent over the taxes in 1277, see Alfonso's letter to the consejo of Burgos of 1277, C. de Ayala Martínez (above, n. 128), pp. 43-44.

¹³⁶ Memorial histórico español, vol. 1, p. 341, 153; below p. 179; I have found only one example of the blanca counted at a rate of five sueldos to the morabetino, Colección de... Murcia, vol. 4, p. 4, 6.

Alternatively, the blanca was reckoned in terms of the morabetino blanquillo itself. If the legal rate of one blanca to six blanquillas was accepted, that meant there were only 15 blancas to the morabetino blanquillo. In reality, this created a morabetino of account worth significantly less than the morabetino blanquillo made up of 90 actual blanquillas. Thus, when the mozarabic merchants named a price in morabetinos of 15 blancas, the price was undoubtedly higher than if one had paid in blanquillas. Though it was technically the same morabetino of account, transactions must have been conducted with a sharp eye as to what species of coin was being used. Hence other documents in these years make it clear that the sums in question are of actual blanquillas. By the early years of Sancho's reign, however, the blanquilla was becoming scarce. This would eventually leave one morabetino of account, based in theory on the original morabetino of 90 dineros but in reality worth far less.

THE REIGN OF SANCHO IV (1284-95)

Alfonso X died in 1284 and was succeeded by Sancho, who had effectively controlled the kingdom for the last two years. At the cortes of Palencia in 1286, Sancho ordered that "the moneda blanca alfonsi which now circulates, which the king, my father, made before this [money] that I now order to be made, ought not to be abandoned (non abata) and that they should buy and sell just as they did until now." 138

127 This distinction can be seen in a will from Oviedo dated 1280: "todos estos dineros que yo mando en este mio testamento quiero sean de los morabetinos alfonsinos blancos de la primera guerra de Granada de a ocho sueldos el mri [morabetino]." This document is Leonese and thus reflects the morabetino longo. There were 96 blanquillas or 16 blancas to the morabetino longo. See García Larragueta (above, n. 41), nos. 451-52; Argüello (above, n. 44), p. 40, 55, see also p. 40, 56; Colección ... Calceatense (above, n. 96), p. 82-83, 48, pp. 84-85, 50; Florez, España sagrada, vol. 16, p. 245.

188 Cortes de los antiguos reinos, pp. 95-96; Argüello, p. 42, 64. Abatir is used in the sense of diminishing or declaring the money worthless, cf. Sancho's ordinance from Cuellar: "la moneda blanquiella de la guerra, que solia correr fasta agora, que sea abatida que non corra a ninguna cosa sino en marco," Memorial histórico español (above, n. 74).



The "moneda blanca alfonsi" certainly refers to the second blancas or the MONETA CASTELLE. Sancho does not call them blanquillas nor "de la primera guerra" and implies that they were the last coins made before the ones that he is presently ordering. Sancho, then, allowed his father's coins to continue in circulation while introducing a new coin of his own.

Later in the ordinances of this cortes, tax rates are detailed in the following manner:

He who has a quantity of ten morabetinos of the moneda nueva, which are sixty morabetinos of those of the war, should pay one morabetino of that same money... and he who has a quantity of five morabetinos should pay half a morabetino of that same money or the quantity in that money which I now order to be made, of which ten dineros make a morabetino of those of the war. 189

The so-called "moneda nueva" is not the coin that Sancho is presently ordering to be made. The term here must describe the other coin in the kingdom, the MONETA CASTELLE which had been called moneda nueva for the previous ten years since it was, until that moment, the newest coin. The ordinance tells us that one morabetino of moneda nueva equals six morabetinos of the war. Assuming, unless otherwise specified, that a morabetino represents 90 coins, one moneda nueva equalled six dineros of the first war. The last coin of his father, which conveniently carried the anonymous description MONETA CASTELLE ET LEGIONIS continued to serve as a six dinero piece during Sancho's reign.

This is confirmed by ordinances from a cortes held by Sancho's son, Fernando IV, in 1303. Fernando explained in the ordinances that because the money of his father Sancho was so much stronger intrinsically than the money he himself had issued, the old money was being taken out of the kingdom since its true worth was not recognized. To remedy this situation, Fernando now retariffed the older coins in an attempt to bring them into parity with his own. The three older coins that Fernando was concerned with were "los seisenes et los coronados et las meajas coronadas." The coronados of Sancho IV are easily identi-



Cortes de los antiguos reinos, pp. 97-98; Argüello, p. 43, 64.

¹⁴⁰ Cortes de los antiguos reinos, p. 167; Heiss, vol. 1, pp. 285–87, 5; O. Gil Farrés, "En torno del privilegia de Lorca...," Numario hispánico 5 (1956), p. 269.

fiable as the coins that portray a crowned bust with the inscription STANCII REX CASTELLE LEGIONIS. There also survive obol size examples of this piece which must be the meajas coronadas to which Fernando refers, as there are no other coins that carry Sancho's name. Fernando's revaluation of the currency, however, helps identify the seisén as the MONETA CASTELLE. Fernando decreed that the seisenes, that is the coins worth six dineros, should now be equal to one sueldo or 12 dineros. Likewise the coronados of his father were now to have the value of 15 dineros and the half coronados half that value. He then ordered that all debts should be reckoned in the following manner. For every morabetino owed, one could pay either ten of Fernando's coins, six of the coronados or 7 1/2 seisenes. 141 As mentioned, there is no doubt which surviving coins were Sancho's coronados. Two specimens of these coronados were analyzed and found to contain .38 and .40 g silver. According to Fernando's equivalencies, six of these coronados equalled 7.5 seisenes. Taking the average of the two coronados analyzed, $6 \times .39 \,\mathrm{g}$ silver = 2.34 g silver = 7.5 seisenes, therefore one seisén = .31 g silver. The seisen of Sancho IV should have contained .31 g silver. The four specimens of the MONETA CASTELLE coin that were analyzed contained .29, .31, .31, and .32 g silver. Clearly the MONETA CASTELLE of Alfonso X was the seisen of Sancho IV.

In the earlier passage from the ordinances of 1286, the value of the coin Sancho ordered to be made at that time is also given. Ten of them are said to equal one morabetino of blanquillas. These can only be the coronados of which Fernando IV spoke. The chronicle of Sancho IV seems to be correct when it states that in 1286 the king "ordered made a money with his mark (señales) which they called coronados." If there were ten coronados to a morabetino of blanquillas, one coronado was ostensibly worth nine blanquillas. Whereas the prieto and the MONETA CASTELLE had been the first seisenes, or six dinero pieces, the



¹⁴¹ Fernando expressed the values of the coins in terms of the "morabetino de la primera guerra." Since he had made his father's coronado equal to 15 dineros (de la primera guerra) there were six coronados to the morabetino de la primera guerra. Likewise, since each seisén was now worth 12 dineros, there were 7.5 to each morabetino. Cortes de los antiquos reinos, p. 168.

[&]quot;Crónica de Sancho IV" (above, n. 3), p. 73.

coronado was the first novén, or nine dinero piece. It will be noticed, however, that intrinsically, the MONETA CASTELLE and the coronado were not in strict parity. Fifteen MONETA CASTELLE, seisenes, did not equal ten coronados, novenes. Fifteen MONETA CASTELLE would have had roughly 4.65 g silver, while ten coronados would have only yielded about 3.9 g. Thus, by a charter of 1287, Sancho founded a chapel in the cathedral of Toledo, endowing the chapter there with "four thousand morabetinos of the heavy money (monedas gruesas) of which fifteen dineros make a morabetino." A morabetino of MONETA CASTELLE was worth more than a morabetino of coronados. Sancho had overvalued his coronados. This disparity was clearly realized by Fernando IV and his advisors when they revalued all the coins. They equated 7.5 seisenes with six coronados although the legal ratio under his father would have been 7.5 seisenes to five coronados, i.e., 15 to 10.

In the summer of 1288, at the cortes of Haro, Sancho promised that after the coming September he would mint no more money in his lifetime and that he would not manipulate the value of the present money. He further declared that no coins could be taken out of the kingdom without royal permission, excepting foreign money and the "novenes that we ordered made." Because the coronado was overvalued, older billon was being attracted to foreign markets. With approximately .17 g silver each, 90 blanquillas yielded 15.3 g silver, while 10 coronados, the legal equivalent, contained only about 3.9 g.



¹⁴³ Argüello (above, n. 44), p. 43, 66.

[&]quot;Mandamos quela moneda nueva que nos mandamos fazer et delos sesenes e las meaias salamanquesas e delas pujesas que non se abatan nin se labren estas nin otra ninguna en toda nuestra vida...," Cortes de los antiguos reinos, p. 104. The moneda nueva is identified as a novén later in the passage and hence is the coronado. The seisén is the MONETE CESTELLE. The meaja salamanquesa is probably the meaja coronada to which Fernando IV also refers. The pujesa here is clearly a physical coin and not a measure of fineness. It may refer to a copper issue that seems to have appeared in the last years of Alfonso X. A petition of 1281 to Sancho asked that his father the king "non ande esta moneda de cobre que agora mando fazer," Colección de... Murcia (above, n. 122), vol. 2, p. 71, 77. The chronicle of Alfonso X also alludesto this coinage (above, n. 87), pp. 59–60. Whatever the pujesas were, they must have been limited. Fernando paid no attention to them in his revaluation.

After 1282, mention of the blanquillas as a physical coin becomes scarce. Indeed the 1288 ordinance does not specifically mention them but makes only a vague reference to "otra moneda." They remain, however, as a ghost unit of account. After ca. 1290, a "morabetino de la moneda de la primera guerra" was no longer made up of 90 individual dineros but rather of 15 seisenes or 10 novenes. Though it retains the same name, the "morabetino de la moneda de la primera guerra" had been drastically devalued under Alfonso and Sancho and would fall even further under their successor.

THE REIGN OF FERNANDO IV (1295-1312)

Fernando IV came to the throne as a minor in 1295. Opposition to his rule centered around Juan, his uncle, and Alfonso de la Cerda, his cousin. They were joined by the rulers of Aragon, Portugal, and Granada in an alliance which sought to dismember the Castilian kingdom. By 1297, in the midst of this anarchy, a new coin appeared in the king's name. A royal donation dated July 21, 1297, mentions "3000 morabetinos of this new money which I ordered to be made, [of] which ten dineros make a morabetino." The new coin was a novén. One of them was equivalent to nine blanquillas of the first war. Officially, it had the same value as the coronado of Sancho IV.

We know, however, that Fernando's coins were recognized as being weaker than the coins of his father. After attaining his majority in 1301,¹⁴⁸ he was forced to revalue his father's coins in 1303 in order to keep them in circulation. Instead of insisting that ten of his coins were equivalent to ten coronados of his father, Fernando declared that ten of



¹⁴⁵ Cortes de los antiquos reinos, p. 104; for clear references to physical monedas de la primera guerra after 1282, see Colección... Calceatense (above, n. 96), pp. 86-87, 52, pp. 94-95, 57; however, these must be carefully distinguished from using the "morabetino de la primera guerra" as a unit of account. "Dos mil moravedis de los primera guerra contado a diez dineros cada moravedi desta moneda nueva que el Rrey don Ssancho... mando labrar," Coleción... Calceatense, p. 103, 64.

¹⁴⁶ O'Callaghan (above, n. 16), p. 401.

¹⁴⁷ Argüello (above, n. 44), p. 44, 71.

¹⁴⁸ O'Callaghan (above, n. 16), p. 402.

his coins equalled six coronados. If he wanted to lure his father's coins back into circulation, the parity had to be just. We can, therefore, tentatively conclude that the silver content of six coronados was more or less equivalent to the silver in 10 of Fernando's coins, $6 \times .39$ g silver = 2.34 g silver = 10 "fernandos," so .23 g silver = 1 "fernando."

We know that the anonymous MONETA CASTELLE, previously attributed by Heiss to Fernando IV, was the last issue of Alfonso X and was retained by Sancho IV as a seisén. It is clear from Fernando's revaluation that his coins were distinct from the coronados. He did not, therefore, simply immobilize his father's coin type. The new coin of Fernando IV can only be the FREX coin. There is no other candidate. Three specimens of the FREX coin taken from the Bourgey hoard and weighing .75, .75, and .80 g were subjected to X-ray fluorescence. The resulting silver content was .26, .24 and .23 g, respectively. It would seem from this, that Fernando had revalued the coinage equitably in 1303.

There survives, however, a royal charter dated October 24, 1297, that orders a mint to be established in the town (villa) of Lorca. The charter instructs that the coins were to be two denarii fine, that is, the alloy used was to be two-twelfths fine silver. It further instructs that from the mark of alloy, 22 sueldos should ideally be cut. This cut was permitted to vary between 19 and 25 sueldos. If the Castilian mark was approximately 230 g, the coins should have weighed between .77 and 1.01 g, with .87 as the ideal weight. 149 Metcalf's study of 538 F REX coins in the so-called "1969 hoard" showed that the modal weights from each mint group fell most frequently within the range of the Lorca charter. Of the 173 specimens selected from the ANS trays as possibly belonging to the Bourgey hoard, 68 fell between .75 and .99 g, and 75 were only slightly below the Lorca tolerance, weighing between .65 and .74 g.150 As mentioned, the prescribed alloy in the Lorca charter was two denarii. A coin cut from this alloy weighing .87 g would contain only about .15 g silver. If the Lorca mint was ever actually established, and there is



¹⁴⁰ Colección de . . . Murcia (above, n. 122), vol. 5, p. 26, 22, cf. p. 28; Metcalf (above, n. 5), p. 103.

¹⁵⁰ Metcalf (above, n. 5), pp. 96-103.

numismatic evidence that it was, ¹⁵¹ it produced a coin far weaker than what Fernando claimed in his revaluation and weaker than the three analyzed **F REX** specimens.

The Lorca charter further stipulated that the mint was to buy at the best market price "seisenes [MONETA CASTELLE] and all other money and other exchangeable items (los otros camios)" that were brought to it. In an effort to regulate this, Fernando decreed that whoever accepted his money should know that the mark of silver was worth up to 1000 dineros of his money and no more. Dividing the Castilian mark of 230 g by 1000, results in .23 g. This surely is not coincidence. Fernando's first coins must have ideally contained .23 g silver but for some reason were so suspect that they lost their premium. Indeed, Fernando gives the impression that some people were demanding more than 1000 per mark.

How and why did Fernando's coins lose their added value so quickly between 1295 and 1297? They did represent a debasement of his father's coins and this, in itself, may have been enough. But we must keep in mind that these were years of extreme disorder in Castile. The chronicle of Fernando IV, written not long after that king's death, reports that during the civil strife the rebels decided "to make money in the name and in the sign of King Don Fernando and that it was five parts less in value (de menos valor las cinco partes)." By five parts, the chronicle could not have meant five denarii, but more likely meant that the counterfeit money was five pogesatae less than the royal money. Taking the prescription of two denarii fine in the Lorca charter and adding five pogesatae, results in a fineness of 3.25 denarii. If Fernando's coin was originally struck at the ideal weight of .87 g (as the Lorca privilege dictates), with a fineness of 3.25 denarii, it would have contained .23 g silver.

With this information, we can tentatively reconstruct what happened during the early years of Fernando's reign. If Sancho IV had held true to his promise, new billon had not been issued since 1288. Hence, Fernando's government issued a new novén within the first two years of

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<sup>151</sup> Metcalf, pp. 92, 102, and 107.
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¹⁵² Colección de ... Murcia, p. 29.

^{158 &}quot;Crónica de Fernando IV" (above, n. 3), p. 110.

his reign, probably at 3.25 denarii fine. The easiest time to counterfeit a coin is when it is new. It is very believable that the coalition aligned against Fernando seized this opportunity. Metcalf, in his stylistic analysis of the "1969 hoard," found several odd coins among those with the mint mark T, Toledo. Though some are crude and may represent the work of individual counterfeiters, others resemble the normal style except for slight variations. The chronicle reports that the counterfeit money was made in Leon, Osma, Dueñas, Deza, and "Castro Tarafe." The rebel coalition, aided by foreign powers, may have had the resources to issue a sizeable number of counterfeits with a stylistic quality high enough to make detection difficult. According to the chronicle, the counterfeit coins were widespread and caused great confusion. "Men did not know which was the good money and thus all things went up in price (pujaron todas las cosas a muy gran precio)." 155

Fernando's novén, containing only about .23 g silver, was already a debasement of his father's coronado. If further debased counterfeits were discovered, the entire coinage was probably quickly discounted on the open market. The Lorca charter clearly shows the government of Fernando facing a market price for silver that prohibited making more coins at this strength, and thus planning to issue a coin with about .14 g silver. The chronicle's account of counterfeiting is a likely explanation for this inflated price. Perhaps the coinage proposed in the Lorca privilege imitated the counterfeit in terms of fineness. Or, the chronicler's information of "5 parts less" may have been based on the difference between the first and second royal issues. The Lorca privilege established a new mint whose coins would presumably be distinguished by a new mint mark. If older mints were also instructed to issue a new debased coin, it was probably subtly distinguished from the previous issue. This could have been accomplished by a variation in legend stops, which the F REX coins display, or perhaps the few coins that read F REGIS instead of F REX represent the change. 156



¹⁵⁴ Metcalf, pp. 95-97.

^{188 &}quot;Crónica de Fernando IV" (above, n. 3), p. 110.

¹⁵⁶ Metcalf, p. 95. I have been unable to obtain M. Chaves y Jiménez, "Doscientos cuatros monedas de Fernando III," Asociación española para el progreso de las cien-

A distinction between coins of Fernando is not reflected in the documents. They refer simply to money of King Fernando counted at ten to the morabetino, ¹⁵⁷ often calling it moneda blanca. ¹⁵⁸ When the king was forced to retariff the coinage of his father because his own was so weak, the decreed equivalencies were based on the assumption that Fernando's coins were about 3.25 denarii fine. Some of his coins we know were in fact this strong. However, Fernando also ordered that "all the counterfeit, bad and false money that was not made in my mints nor by my order" be called in and destroyed. ¹⁵⁹ This may have effectively removed the weaker coins whether they originated in rebel mints or (though the crown would not admit it) in royal mints.

A royal charter of 1306 referred back to a sum of 1200 morabetinos purportedly conceded to the monks of Santa Maria la Real de Burgos by Alfonso X in 1255. Fernando described these morabetinos as being "of the good money which was current at that time" and which equalled 7200 morabetinos of the money which he "had ordered made at ten dineros to the morabetino." Here, then, was a recognition that the morabetino had been drastically reduced in value since mid-century. One morabetino of the old money was equated to six morabetinos of the money of Fernando IV. Though the sum in question appears to date

cias. Congreso de Sevilla, vol. 8, sección 6A, Ciencias históricas, filosóficas y filológicas (1917), who published a chemical analysis of some F REX coins. Although the coins analyzed are not described, according to Metcalf they were found to be 15.4% to 15.5% silver, that is, they were two denarii fine (Metcalf, pp. 95 and 103).

187 In Leon, a morabetino longo still theoretically represented 96 dineros. Hence the noven was counted at a rate of "once dineros menos tercio de un dinero" to the morabetino, Historia, pp. 334–35. Castan Lanaspa's summary of a 1303 Leonese document gives money of Fernando at the rate of 11 denarii to the morabetino; this is perhaps an oversight, or it might reflect a genuine distrust of Fernando's money, Documentos de Villaverde, p. 139, 84. The awkward rate of 10% dineros to the morabetino longo probably accounts for the stipulation in the ordinance of 1303 that Fernando's coin should not be rejected unless it was a piece less than one-third, Cortes de los antiquos reinos, p. 166.

156 The Lorca privilege calls for the flans to be bleached before striking. This appears to have become standard practice in the latter half of the century, the prieto of Alfonso X being the exception, *Colección de... Murcia* (above, n. 49), vol. 5, p. 28.

- 150 Cortes de los antiquos reinos, p. 166.
- 160 Argüello (above, n. 44), p. 45, 77.



from 1255, and thus should refer to burgaleses, Fernando clearly treated it as though it were a sum of blanquillas, 90 of which contained about 15.3 g silver. Fernando presumed that each of his novenes contained about .23 g silver, so that six morabetinos of these novenes yielded about 13.8 g silver. The equivalency was not perfect, but fairly close. Another royal document of 1312 gives the same rate of one morabetino of the "buenos" to six morabetinos of current money. 161

An undated agreement between the monks of Silos and the clergy of the same town shows a similar commutation. The text that survives of this agreement reads:

The abbot and chapter, consulting amicably with the clergy of the church of St. Peter of the same place, leased to the said clerics, and to their successors forever, half of the oblations and mortuae pertaining to the abbot and the chapter, for fifty morabetinos of the old money of Burgos which was then in use...since that time one morabetino of the said ancient money ought to be worth nine morabetinos of the money of the war according to legitimate weight, but according to the custom of the kingdom is worth six.¹⁶²

It must be clearly kept in mind that documents of Fernando IV's time were still using the term morabetino de la guerra as a unit of account for ten novenes. 163 Thus in this agreement, the monks are agreeing to accept



¹⁶¹ Argüello, p. 46, 81.

^{162 &}quot;Abbas et conventus amicabiliter se componentes cum clericis Eclesiae Sancti Petri ejusdem loci, arrendaverunt clericis memoratis, et eorum succesionibus in perpetuum, medietatem oblationum et mortuariorum ad eosdem abbatem et conventum pertinentem, pro quincuaginta morabitenis antique monete burgensium qui tunc erat in usu...cum tunc unus morabetinis dicte monete antique, secundum pondus legitimum valeat novem morabetinos monete de la guerra, aut secundum consuetundinem regionis valet sex." Argüello, p. 28, 22; Historia, p. 327. The date 1250 given by Arguello is clearly wrong, and the reference to moneda de la guerra makes it clear that the date has to be after the early 1260s. I have been unable to locate the original published version of this document by F. Liciniano Saez. J. González in his most recent work follows the Argüello text, Fernando III, vol. 1, p. 467, n. 33. Based on circumstantial evidence, M. Férotin, Recueil des chartes de l'Abbaye de Silos (Paris, 1897), p. 290, 272, dated what appears to be this same charter to ca. 1290; however, the monetary references place it clearly in the reign of Fernando IV.

¹⁶³ The Lorca privilege, for example, sets the salary of the "sobreguardas" at "tres mil maravedis de la moneda de la guerra, a diez dineros desta moneda (i.e., the money now being made) cada maravedi," Colección de...Murcia (above, n. 122), vol. 5, p. 29.

six morabetinos de la guerra as equivalent to one of the burgaleses. Yet, they realized that this was an equivalency based on the blanquillas. We have suggested that the burgaleses were stronger than the blanquillas, at a rate of 2 to 3. This agreement confirms this ratio. The monks had begrudgingly added that if one went by legitimate weight, and not custom, there should have been not six morabetinos of account to one morabetino of the old money, but rather nine. The morabetino of account had diminished by nine times since the days when it was made up of 90 burgaleses.

Equivalencies

Coin	Period of Circulation	Denomination	Commonly Accepted Accounting Units	Approximate Amount of Silver per Morabetino	
Burgalés	ca. 1212-68	dinero	90 per morebetino alfonsin		
Pepión	ca. 1188-1268	dinero	180 per morabetino alfonsin		
Leonés	ca. 1180s-1268	dinero	96 per morabetino leonés		
		Alfonso	x		
Blanquilla	introduced 1264–68	dinero	90 per morabetino de la primera guerra	15.3 g	
Prieto	introduced ca. 1271	6 dineros	90 or 60 per mora- betino prieto	51.3 or 34.2 g	
Seisén	introduced ca. 1276	6 dineros	15 per morabetino de la primera guerra	4.65 g	
		Sancho I	v		
Coronado	introduced 1286	9 dineros	10 per morabetino de la primera guerra	3.9 g	
	Fernando IV				
Novén	introduced ca. 1297	9 dineros	10 per morabetino de la primera guerra	2.3 g	
Seisén of Alfonso X	retariffed in 1303	12 dineros	7½ per morabetino de la primera guerra	2.3 g	
Coronado of Sancho IV	retariffed in 1303	15 dineros	6 per morabetino de la primera guerra	2.3 g	



THE REIGN OF ALFONSO XI (1312–1350)

It was during the reign of Alfonso XI that the Bourgey hoard was deposited. Alfonso X's introduction of the prieto, a multiple dinero piece, had led to the abandonment of the single dinero coin. No single dineros seem to have been struck by Alfonso X after 1271, Sancho IV, or Fernando IV. The short-lived prieto and its debased successor, the MONETA CASTELLE, were originally intended to serve as seisenes, i.e., 6-dinero pieces, though neither was intrinsically equivalent to six individual dineros. Sancho IV introduced a slightly stronger coin, the coronado, to act as a novén, i.e., 9-dinero piece. However, it was not in true parity with the 6-dinero piece and so represented a further debasement. This accelerated the disappearance of the last single dinero piece, the blanquilla, for it was now absurdly undervalued. The 6 dinero pieces also started to fall out of circulation as the ordinance from Haro in 1288 testifies. Sancho's son, Fernando IV, also issued a 9-dinero piece, though not a coronado either in type or in fineness. This weakened novén eventually prompted Fernando to revalue the older coinage. By that point, the blanquilla appears to have been virtually nonextant, for it was not even considered in the revaluation. The seisen became a 12-dinero piece. The coronado of Sancho was transformed into a 15-dinero piece while Fernando's own coin remained a novén, a 9dinero piece. It was these last two denominations, the coronado and the novén, that Alfonso XI chose to continue.

According to the chronicle of Alfonso XI, that monarch did not issue billon until the twenty-first year of his reign, which should have begun in September 1332, although a royal document dated May 25, 1332, refers to "maravedis de la moneda nueva." The chronicle tells us that the king ordered "novenes and coronados of the same fineness and tale as the money which was ordered made by King Fernando, his father." The numismatic evidence shows that during the reign of Alfonso at least four different coronados and two distinct novenes



¹⁶⁴ The chronicle gives the twenty-first year of his reign as 1330, but this is clearly wrong, "Crónica de Alfonso XI" (above, n. 3), p. 230; Coleccion... Calceatense (above, n. 96), p. 135, 84.

^{165 &}quot;Crónica de Alfonso XI," p. 230.

appeared. The coronados are mainly distinguished by the position of the bust on the obverse. On one type, the legend TLFONS REX, with variations TLFOS and TLOS, is interrupted by the crowned bust which faces left. On the second and third type, the crowned bust is completely encircled by the legend which, on the second type, is TLYONSVS REX, while on the third is TLYONSVS GRT REX or sometimes GRT R. Finally, there is a fourth coronado in the name of Alfonso that portrays the bust facing with legend TLFOSV REX.166 The novén basically retained the style of Fernando IV, that is, a castle obverse and a lion reverse. On one variety, the types appear inside a square, while in a second more elaborate variety, the types are surrounded by five lobes. Which of these coronados and novenes were issued first and whether any of them truly maintained the standards of Fernando IV or Sancho IV have not been firmly established. A thorough examination of the documentation for this reign as well as the remainder of the fourteenth century remains to be done. Nevertheless, the composition of the Bourgey hoard allows us to draw a number of conclusions about the state of the coinage in the early fourteenth century.

The Bourgey hoard is described in the notes as containing 67 coronados and 27 novenes of Alfonso XI. It would appear, then, to have been deposited after 1332. All the coronados were of the first basic type mentioned above, with bust left and TLFONS or TLFOS REX. None with TLOS REX were present. Likewise, of the 27 novenes, 24 were of one type, with only three examples of the more elaborate lobed novén. The inclusion of two types of novenes suggests that the hoard was in fact interred sometime late in the reign of Alfonso XI. The chronicle reports that during the seige of Algeciras in 1343, Alfonso sent word to Seville that a new money should be made. This coin was to be of a lesser fineness than the previous and distinguished by a difference in style (de otra señal, et de menor ley). Pio Beltrán asserted that this new coin was the lobed novén. Indeeds the three specimens of this type in the

Only the first of these types appears in Heiss, see A. Orol Pernas, "Ordenación cronológica de las acuñaciones coruñesas de Alfonso XI," *Numisma* (1972), pp. 351-60.

^{167 &}quot;Crónica de Alfonso XI," p. 354.

Pio Beltrán Villagrasa, "La pieza de 'veinte maravedís de oro' de Alfonso XI en la 'colección Sastre,' " Numisma 1 (1951), pp. 29-30; Historia, p. 346.

Bourgey hoard bear the letter **S** as a mint mark. If Beltrán is correct, then the Bourgey hoard would date to after 1343. But of this, we cannot be certain.

The chronicle also claims that in the 20 years during which Alfonso did not mint, the money of Fernando became very scarce and foreign coins had to be used. Yet, the person who accumulated the Bourgey hoard had available a large number of the FREX coins as well as good number of coronados of Sancho IV. The Bourgey hoard may have been a savings hoard to which the issues of Alfonso XI were later added. However, since other hoards deposited in the reign of Alfonso XI or later also contained a good number of Sancho's coronados and Fernando's novenes, 170 the more logical conclusion is that these older coins were still fairly common after 1330. Fernando IV's revaluation was apparently successful in stopping the disappearance of his father's coronado. The coronado was only legally undervalued from ca. 1297, when the FREX coin was introduced, to 1303. Thus, both types are represented in the hoards of the next century.

The Bourgey hoard contained five MONETA CASTELLE coins, the issue before the coronado. By the time Fernando had retariffed the money in 1303, the MONETA CASTELLE, a seisén, had been undervalued since ca. 1286 when Sancho's coronado was issued as a novén. According to Sancho's decree of 1288, he was having trouble keeping the seisén in circulation. Thus it is understandable that whoever accumulated the Bourgey hoard found few MONETA CASTELLE coins still in circulation. However, the MONETA CASTELLE does not seem to have been quite as scarce as this hoard would indicate. Most other hoards deposited in the reign of Alfonso XI or later usually contained some examples of this coin. Sometimes it was relatively well represented. The hoard of "Ordejon de Abájo," for example, had 25 MONETA CASTELLE coins compared to 35 coronados of Sancho, 45 novenes of Fernando IV, 75 coronados of Alfonso XI, all the same basic types as in the Bourgey hoard, and 215 coins from the second half of the fourteenth century. The recently published hoard of Astudillo contained one blan-



^{169 &}quot;Cronica de Alfonso XI," p. 230.

¹⁷⁰ For a convenient summary of most of the published hoards refer to the table in Metcalf (above, n. 5), p. 93.

quilla, three of the half-prieto pieces, 41 MONETA CASTELLE coins, 26 coronados of Sancho, 157 novenes of Fernando IV, and 186 coins of Alfonso XI.¹⁷¹ In the light of this, Fernando's revaluation appears to have been reasonably effective in keeping the MONETA CASTELLE in circulation.

Hoards deposited in the reign of Fernando IV or later contained few, if any, prietos, half-prietos, blanquillas, or other coins before the MONETA CASTELLE issue. Contemporary evidence indicates that the prieto, because of its relatively high silver content, was popular outside Castile and was already scarce in the kingdom by 1227. While Fernando's revaluation at the turn of the century placed the MONETA CASTELLE, the coronado, and half-coronado in parity with Fernando's coin, it ignored any earlier issues. Thus, by the close of the thirteenth century, these earlier issues were very rare in circulation, as both the documents and the hoards attest. The Bourgey hoard, as described in the notes, contains nothing earlier than the MONETA CASTELLE issue. There is a possibility that the notes are incomplete. As explained in the introduction to the catalogue, the hoard may have contained a small number of blanquillas and prietos, and possibly one half-prieto. 172

171 B. Osaba y Ruiz de Erechun, "Tres tesorillos medioevales, Briviescan, Muñó. Ordejon de Abájo (Burgos)," Numario hispánico 3 (1954), pp. 95–97; I. Saez Saiz and M. Rueda Sabater, "El tesorillo de Astudillo," Gaceta numismática 74–75 (1984), pp. 199–229. Two other hoards, not included in Metcalf's table, ought to be noted.

	San Salvador del Paramo	Valdunquillo
Moneta Castelle	58	12
Coronados of Sancho IV	50	2
Novenes of Fernando IV	180	372
Coronados of Alfonso XI	33	0
Novenes of Alfonso XI	82	316
Pedro I or later	76	0.

The alfonsin coronados of the San Salvador hoard were all of the basic type in the Bourgey hoard. It also contained one coin of Pedro IV of Aragon (1325–87). Both hoards are described in E. Collantes Vidal, "Variantes de dineros con leyendas F Regis y F Rex en los tesorillos de San Salvador del Paramo y de Valdunquillo," *Acta numismática* 4 (1974); the San Salvador hoard is further discussed in Collantes (above, n. 8), pp. 157–66.

¹⁷² See the appendix below.



The monetary history of medieval Spain is complex. The Christian states freely used Islamic gold and silver pieces, imitated both, and struck billon denarii on the western model. Billon coins were the money of everyday transactions and were clearly of paramount importance to the populace. Most of the accounting of debts and payments was based on billon and the institution of the moneda tax appears to have been developed specifically to protect it. The Bourgey hoard seems to be a fairly accurate portrayal of the types of billon that circulated in Castile-Leon in the early fourteenth century. These are the same types that appear in other known hoards deposited around the same time. This pattern of type distribution is consistent with what is known of the coins' intrinsic silver value and with the manipulation of their legal value as seen in the documents.

A sensible chronology can now be assigned the coin types that appear in the Bourgey hoard. While knowledge of these coins raises further questions concerning both earlier and later coinages of Castile-Leon, it also supplies a point of reference to guide future investigation. Attributions for coins of the twelfth century are still mainly based on Heiss, though new evidence shows them in need of revision. The "Sur de España" hoard and the Soria hoard both contained specimens of a coin which reads THIVS REX on the obverse and TOLLETT on the reverse (Heis, pl. 1, 2-4) alongside coins of Alfonso X.¹⁷³ Heiss had attributed these coins to Alfonso the Battler of Aragon (1104-34) sometime husband of Queen Urraca of Castile. These two hoards, however, along with more recent archeological site finds, 174 indicate that this coin circulated in the thirteenth century. Beltrán argued that the THIVS REX was the pepión of Alfonso VIII subsequently immobilized under Fernando III. However, working backward from the coinage of Alfonso X, we can determine that it probably was not the pepión. The blanca de la primera guerra, the first issue of Alfonso X, contained roughly



¹⁷³ Beltrán (above, n. 7), pp. 129-46.

¹⁷⁴ See the report of coin finds from the excavation of the "necropolis" of Tiermes in the province of Soria. On that site, five **THTVS REX** coins have been found. No other coin has been found that dates before ca. 1260. Carlos de la Casa Martínez, "Moneda medieval hispania-cristiana en Tiermes," *Gaceta numismática* 74-75 (1984), pp. 177-82.

.17 g silver. We know further, that the blanca was equated with the burgalese at a rate of 3 to 2. The burgalés, then, should have had approximately .26 g silver and the pepión about half that amount. Two examples of the TNFVS REX coin were selected from the ANS trays for analysis by X-ray fluorescence. Both closely resemble Heiss, pl. 1, 4. One weighed .98 g and was found to be 40 percent silver. Thus it contained roughly .39 g silver. The second weighed .85 g, was 28 percent silver and so contained .24 g silver. The TNFVS REX, then, is a possible candidate for the immobilized burgalés of Fernando III, but could hardly have been the pepión. Clearly, the varied coinage of Alfonso VIII needs more detailed study. The pertinent documentary evidence is very thin, a fact which will necessarily place a greater emphasis on numismatic techniques.

The documentary sources become more abundant in the fourteenth century. Here the questions are not so often as fundamental as attribution of types but rather concern the relative value of different issues. We have already pointed out that the coinage of Alfonso XI was much more complex than the chronicle portrays it; no doubt the years of civil war that characterized the second half of the fourteenth century compounded this picture even more.

There are still many unresolved questions concerning the period from roughly 1250–1350. In addition to the billon coinage of Castile-Leon examined here, the crown issued gold (both morabetinos and doblas) and large silver denomination coins. Some basic problems of attribution remain among the alfonsin pieces, and an understanding of how these larger pieces were reckoned with the more common billon coinage is needed. As with all of western Europe, Spanish society became increasingly dependent on a monetary economy from the twelfth century onward. Only with a more complete picture of the monetary history of Castile-Leon can we hope for a better understanding of the economy of medieval Iberia as a whole.

178 A similar study awaits the separate coinages of Leon. In this regard see A. Orol Pernas, Acuñaciones de Alfonso IX (Madrid, 1984).



APPENDIX

THE BOURGEY HOARD

The surviving notes for the Bourgey hoard describe 317 coins. These can be broken down as follows: five MONETA CASTELLE coins, 62 coronados of Sancho IV, 156 F REX coins or novenes of Fernando IV, 67 coronados of Alfonso XI, and 27 novenes of Alfonso XI. The notes themselves consist of 19 slips of paper, each about $8 \text{ cm} \times 12 \text{ cm}$ in dimension. Their author, following Heiss's attributions, grouped the coins according to each king's reign. For instance, one slip bears the heading, "Trouvaille de 62 deniers de Sancho IV," followed by a general description of the type and a breakdown of the types into different varieties. The most common variant between coins of the same type is a letter, symbol, or combination of the two which in all probability served as a mint mark. The author also noted misspellings and oddly punched letters in the legends as well as occasionally noting differences in their stop marks. He did not, however, observe variants in the types themselves, i.e., whether a castle had two or three crenellations on the towers or whether a lion was elaborately drawn. In this fashion, the 62 coins of Sancho IV are broken down into 21 varieties and occupy several slips of paper. Likewise, the five MONETA CASTELLE coins are contained on a single sheet under a heading for Fernando IV (rather than Alfonso X), while the F REX coins are given to Fernando III (instead of Fernando IV). Since the MONETA CASTELLE coins are attributed to Fernando IV, there is no slip describing coins of Alfonso X. Nowhere do the notes give a total number of coins for the hoard, although the total number of coins for each king is given in the individual headings. Thus, there is the possibility that a slip (or slips) describing coins of Alfonso X is missing.

Three coins of thirteenth century Castile-Leon, described in the notes, are particularly unusual. They belong broadly to the group of novenes of Alfonso XI, but have a unique design and legend. The ANS has in its cabinets only four specimens of this coin. Three of these share successive accession numbers, are Hispanic Society coins, and have a



similar patina not common to the fourth. They match the description in the notes and are undoubtedly the coins referred to therein. These three coins belong to a series of Hispanic Society coins of thirteenth century Castile-Leon which were accessioned at the ANS sequentially.

As did the Bourgey notes, the ANS accessioner assigned the FREX coins to Fernando III. All the ANS coins in this series from Fernando III through Alfonso XI were pulled for this analysis. From this group of over 400 coins some were immediately eliminated. There were ten Alfonso XI coronados of types not described by Bourgey as well as two FREGIS coins, a type also not described in the notes. In addition, since the FREX coins were assigned to Fernando III, this large group contained coins of Alfonso X not mentioned in the notes. Because a slip for Alfonso X may have been missing from the notes, these 16 coins were set aside. These eliminations resulted in a working group of 387 coins.

This group frequently yielded the correct number or nearly the correct number of coins of one variety said to have been present in the hoard. Upon examination, many of the more distinctive coins described in the notes, coins with misspelled legends or with signs of worn or broken punches, were located within the group. Most of the coins in the group shared a similar patina, though this was rejected as a means of eliminating non-hoard coins. This group of 387 coins undoubtedly contains the majority of the hoard. Nonetheless, to establish a consistent one-to-one correspondence between notes and coins would be artificial and to a certain extent is unnecessary. The hoard is schematically presented below both as the Bourgey notes describe it and as it is today, in many ways irrevocably dispersed among the larger lot of 387 coins. Nonetheless, the importance of the hoard is not contingent upon the identification of the physical coins. As there is no reason to suspect that the notes are fraudulent or inaccurate, we cannot afford to ignore the evidence they present.

The catalogue is arranged by general type and then broken down by mint mark. No attempt has been made to interpret the mint marks. In some cases, particularly among the FREX coins, distinctions that Bourgey noted between similar markings have been combined into one



mint mark. Unintentional differences in the legends caused by carelessness or defective punches have not been given, but distinct variations are often noted in the general heading for each type. Even though there was no slip for Alfonso X, 16 coins of his (8 dineros, 7 prietos, and 1 half-prieto) are included as possible members of the hoard.

ALFONSO X

Dinero, introduced between 1264 and 1268, called "moneda de la primera guerra"; "dineros alfonsis"; "las blancas"; "las blanquillas" (after ca. 1276)

Obv. The onsus rexcas tellee thegio

Rev. Field in quandrants: upper l., castle; upper r., lion; lower l., lion; lower r., castle.

Heiss, pl. 5, 2–3

X-ray fluorescence, Plate 22: 1) .86 g, 23% AR; 2) .83 g, 19% AR; 3) .92 g, 18% AR; 4) .85 g, 24% AR

Other weights: .97, .57, .94, .70 g

	Bourgey Notes	ANS Trays
Upper l., above castle, +	0	2
•	0	1
-	0	2
No mark or rubbed off	0	1
Lower r., below castle, •	0	2
Total	0	8

Prieto, introduced by 1271

Other weights: .97, .92, .98 g

Obv. + THE REX CASTELLE In circle, castle, three towers $Rev. + \vdots$ ET LEGIONIS \vdots , var. + ET | + : ET In circle, lion l. Heiss, pl. 5, 4-6 X-ray fluorescence, Plate 22: 5) .91 g, 59% AR; 6) .92 g, 60% AR; 7) .99 g, 63% AR; 8) 1.11 g, 59% AR;



	Bourgey Notes	ANS Trays
Below castle, M	0	3
F	0	1
В	0	2
Unidentifiable	0	1
Total	0	7

Half-Prieto, introduced ca. 1271

Obv. + TLF: REX: CTSTLL In circle, castle, three towers

Rev. + ET: LEGIONIS In circle, lion r.

Heiss, pl. 5, 7 Weight: .65 g

Bourgey Notes ANS Trays
0 1

Seisén, introduced ca. 1276, called "las blancas alfonsis" or "moneda nueva." See p. 202, Fig. 2

Obv. + MONETA: CASTELLE In eight-lobed border, castle, three towers

Rev. + : ET LEGIONIS: In seven-lobed border, lion l.

Heiss, pl. 6, 4–10

X-ray fluorescence, Plate 22: 9) .63 g, 46.5% A; 10) .74 g, 42% A; 11) .73 g, 43% A; 12) .78 g, 42% A

	Bourgey Notes	ANS Trays
Below castle, 🍑	1	1
F .	1	2
r	3	4
В		1
к		2
S		2
Ľ		2
н		1
No mark		3
Total	5	18

Obv. SANC-II REX Crowned bust l.

Rev. CASTELLE LEGIONIS Castle, three towers, cross above middle tower.

Heiss, pl. 5, 4–14

X-ray fluorescence, Plate 23: 13) .80 g, 47% AR; 14) .88 g, 45% AR

	Bourgey Notes	ANS Trays
To l. and r. of cross:		-
H - *	3	8
II - *	8	11
I - *	1	0
* - *	1	1
N - *	1	0
* _ &	6	8
& _ *	4	4
ĭ� ⁻*	1	0
B - *	10	14
. B - *	2	6
B - * obv. star above crown	2	4
L - * obv. star above crown	1	6
L i - *	2	0
* - L	1	0
* - * in castle gate, L	8	9
* - * in castle gate, S	2	4
* - * in castle gate, T	9	10
* - 😭	0	4
Y _*	0	3
Total	62	92

FERNANDO IV

Novén, introduced ca. 1297. See p. 202, Fig. 4

Obv. + \mathbf{F} REX CASTELLE, var. $\vdots + \vdots \mathbf{F} \vdots | + \vdots | + \mathbf{F} \vdots | + \mathbf{F} \exists | + \mathbf{F} \mathsf{REX} :$ (others not recorded). Castle, three towers



Rev. + ET LEGIONIS, In circle, lion 1. Heiss, pl. 5, 1-5 X-ray fluorescence, Plate 23: 15) .75 g, 35% A; 16) .80 g, 29% A; 17) .75 g, 32% A

		Bourgey Notes	ANS Trays
In castle gate,	T	32	32
	В	11	10
	.B	2	2
	В.	1	2
	. :	1	1
	 :	5	10
	I	1	1
	1	0	1
	M	3	6
	. B .	1	0
	! ·	0	1
	~	9	11
	¥	. 2	1
	•	3	. 9
	•••	50	51
	S	21	22
	C	3	2
Unidentifiable	e	11	9
Total		<i>156</i>	171

ALFONSO XI

Coronado, introduced ca. 1332 or later. See p. 202, Fig. 5

Obv. TLFO - NS REX, var. TLFO - S REX Crowned bust 1.

Rev. + CASTELE LEGIONIS Castle, three towers



Heiss, pl. 6, 6-10 X-ray fluorescence, Plate 23: 18) .75 g, 48% A; 19) .74 g, 49% A

	Bourgey Notes	ANS Trays
To l. and r. of castle center		
tower, B - *	13	12
_	0	1
Under castle,	2	2
В	1	0
S	8	14
To r. and l. of castle center		
tower, ¥ - * under castle *	1	3
Lı - * under castle Lı	15	18
* - * in castle gate, M		
obv. * behind head	6	5
* - * in castle gate, M	2	5
In castle gate, T	16	18
~	1	0
Indistinct	2	0
Total	67	78

Novén, introduced ca. 1332 or later. See p. 202, Fig. 6

 $Obv. + \pi \mu$. REX . CAS . TELL. E var. TEL. E In square, castle, three towers

Rev. + E . TLE . GIO . MIS In square, lion rampant 1.

Heiss, pl. 6,.13–14

X-ray fluorescence, Plate 23: 20) .81 g, 34% $\ensuremath{\mbox{\it A}\!\mbox{\it R}}$; 21) .81 g, 46% $\ensuremath{\mbox{\it A}\!\mbox{\it R}}$

	Bourgey Notes	$ANS\ Trays$
Obv. B below castle; rev. B at end of	7	4
legend, X under lion's l. rear paw		
Obv. Le below castle, O above r.	4	5
tower; rev. L at end of legend, Θ under lion's l. rear paw		
Obv. O below castle; rev. X at end of	1	0
legend		



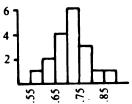


Fig. 2: Seisenes of Alfonso X

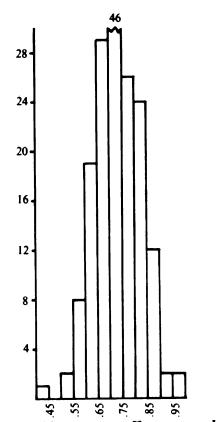
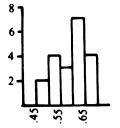
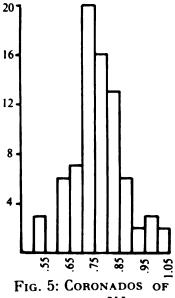


Fig. 4: Novenes of Fernando IV



24 • 20 • 16 129

Fig. 3: Coronados of Sancho IV



ALFONSO XI

FIG. 6: NOVENES OF ALFONSO XI

Obv. below castle; rev. at end	4	4
of legend		
Obv. 📭 below castle; rev. X at end	1	1
of legend, lion standing, facing		
Obv. S below castle; rev. S at end of	3	0
legend		
Obv. T in castle gate	4	6
Total	24	20

Novén, introduced perhaps in 1343

Obv. + The DI GRT REX CTSTEL var. CTSTEL: or CTSTE: In five-lobed border, castle, three towers

Rev. + The DI GRT REX LEGION In five-lobed border, lion rampant 1.

Heiss not

Weights: .80, .74 (Plate 23, 22), .66 g

	Bourgey Notes	ANS Trays
S under tower	3	3



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WERE COUNTERFEIT BRITISH STYLE HALFPENCE DATED 1785 MADE SPECIFICALLY FOR AMERICAN USE?

(Plates 24-25)

ERIC P. NEWMAN

It is over a century since Wyllys Betts in 1886 brought to the attention of the numismatic public the existence in the Yale College collection of a counterfeit British style halfpence dated 1785.¹ The date on that counterfeit is not only ten years after the date of the last prior minting of genuine British halfpence in 1775 but is the same year as the first franchised coinage of any American state (Vermont and Connecticut) as well as the same year as the experimental IMMUNE COLUMBIA and CONFEDERATIO coinages. The 1785 date is also the identical year the copper CONSTELLATIO NOVA production coinage was first shipped to America whether dated 1785 or 1783, the first evidence of circulation being early in 1786.²

The research by Betts was presented in New York to the American Numismatic and Archaeological Society (now the American Numis-



¹ The word counterfeit(s) as used herein means counterfeit(s) made for general public circulation when pieces they imitated were current and does not mean forgeries made to deceive collectors or copies made as souvenirs.

² Eric P. Newman, "The Source of the Nova Constellatio Copper Coinage," *The Numismatic Scrapbook Magazine* 26 (1960), p. 7; "Morris Blazes Trail with Patterns," *The Numismatic Scrapbook Magazine* 38 (1972), p. 602.

matic Society) and was subsequently published.³ The address outlined the significance of counterfeit British style halfpence in America and asserted that certain varieties were minted in America.

While there was only one variety of the 1785 counterfeit British style halfpence in the Yale collection,4 five varieties struck from three obverse dies and three reverse dies can now be described (Plate 24, 50-52, 85A-C). These three pairs of dies are very similar, the same letter and number punches having been used to make all of them. The same obverse device punch was used to make the counterfeit obverse dies with which the reverses dated 1785 were used, and the same reverse device punch was used to make the counterfeit reverse dies dated 1785. The 1785 halfpence show no American insignia or legends and have no distinctive characteristics except the date. They are not known to be muled with any other dies. One reverse die (85A, see Catalogue below) has a crudely cut British Union on the shield but on each of the other two reverse dies the British Union is indicated but not completed. On the obverses the hair of George III behind the laurel wreath is in a layer of curls, one below the other, somewhat like the genuine British halfpence dated from 1770 through 1775.

For the 1785 counterfeit British style halfpence to be accepted as part of the early American coinage series requires convincing evidence. It is not as readily proven as the Machin's Mills coinage of counterfeit halfpence which had some of its dies muled with dies carrying American insignia or legends and which were coined by a known enterprise. As early as 1875, S. S. Crosby was well aware of counterfeit halfpence and their muling with dies he described as having American legends, but it took almost 100 years for the wholly British style, American made pieces to be widely accepted as American coins through additional research and findings.

- ³ Wyllys Betts, Counterfeit Half Pence Current in the American Colonies and Their Issue from the Mints of Connecticut and Vermont (New York, 1886).
- ⁴ The 1785 and other counterfeit British style halfpence mentioned by Betts were apparently donated to Yale College between 1863 and 1886 since none of them are included among American or British coins in Henry Champion, Catalogue of the Cabinet of Coins Belonging to Yale College (New Haven, 1863).
- ⁵ Sylvester S. Crosby, *The Early Coins of America* (Boston, 1875), pp. 191-202, published copies of two Machin's Mills partnership documents.



Positive proof is more convincing than circumstantial evidence, but sometimes only circumstantial evidence is available. Circumstantial evidence may consist of the elimination by negative findings of all but one alternative. For the 1785 counterfeit British style halfpence to be classified specifically for American use involves proving that all other reasonable alternatives should be discarded.

It must first be recognized that no self-respecting counterfeiter would put a date far into the future on products intended for prompt circulation, so the existence of such counterfeit halfpence dated 1785 confirms that those coins were produced not earlier than late 1784 for 1785 circulation or actually in 1785. The American made British style coinage makes it clear that backdating counterfeit coppers was sometimes practiced just as it was in Great Britain, but there was usually a convenient or furtive reason for backdating. Backdating to the year 1785 at a later date has no justifiable motive.

The small quantity of genuine British halfpence coined during the reign of George III prior to American Independence was grossly inadequate for the needs of the British public and was produced at the Royal Mint in London from 1770 through 1775. This insufficiency resulted in enormous quantities of counterfeit British halfpence being struck in Great Britain by private coiners with these pieces readily receiving public acceptance. This was a practice which had taken place extensively during the reign of George II due to the lack of enforcement of the law against copper coin counterfeiting and a failure of the Royal Mint to increase its output. Counterfeiting increased during the reign of George III. There was a substantial profit in coining copper for any public or private minter. It had been a normal commercial practice to export and use for circulation in Colonial America quantities of counterfeit British halfpence. After the 1783 Treaty of Paris closing the American Revolution, exports of counterfeit British halfpence from Great Britain to America increased until hampered by the American gluts of 1785, 1787, and 1789. British counterfeiters had dated a few of their pieces 1776, 1777, or 1781 but usually backdated the coins to 1775, the last year of genuine British halfpence production.

⁶ Eric P. Newman, "American Circulation of English and Bungtown Halfpence," Studies on Money in Early America (New York, 1976), pp. 134-72.



The first evidence of counterfeit British halfpence struck in the United States was published in the *Providence Gazette* of April 17, 1784, where it was stated that such halfpence were coined in southern Massachusetts. The source of the one known variety of a counterfeit British style halfpence dated 1784 (Vlack 14-84A)? is attributed to the locale of North Swansea, Massachusetts. That coin displays obviously unskilled workmanship compared to British made counterfeits. Other halfpence were cast as well. There was a criminal case involving counterfeit halfpence in Philadelphia in September 1783, but these pieces were cast by pressing circulated halfpence (genuine or counterfeit) into sand to make the molds and were thus not comparable in quality or quantity to die struck coinage.8

To attempt to establish whether the 1785 counterfeit British style halfpence was specifically for American use requires one of two alternatives to be established:

- 1. that the 1785 coinage was struck in the United States; or
- 2. that the 1785 coinage was struck in Great Britain specifically for shipment to and use in the United States, whether ordered by an American merchant(s) or intended to be sold to an American merchant(s) after production.

No evidence that 1785 counterfeit British style halfpence were struck in the United States has been located. The die work on the 1785 pieces seems far superior to American abilities of that period. Betts did not draw any conclusions as to whether the 1785 counterfeit British style halfpenny in the Yale collection was struck in the United States, but would have if he had had any evidence. He merely illustrated the coin as no. 4 and said it was similar to a 1775 counterfeit British halfpenny which he illustrated as no. 3. An attempt was made recently to tie some letter punches used on the 1785 counterfeit dies to letter punches used on dies for some Connecticut coppers, but in each situation the



⁷ Robert A. Vlack, "Early English Counterfeit Halfpence Struck in America," photocopied ms with two plates.

⁸ Newman (above, n. 6), p. 156.

Betts (above, n. 3), p. 4.

punches differ, 10 and no connection with American struck coinage has been found.



The legends on the genuine and counterfeit George III halfpence of the first type, regardless of date, have the letter R punched in twice on each obverse die and once on each reverse die. In the counterfeit 1785 halfpence dies designated herein as 50 and 85A each R has complete serifs on each side of the left base. On the coins struck from the two other pairs of counterfeit 1785 halfpence dies parts of the R punch appear to have broken off, resulting in each R on each of those dies having a developing defect. Not only is the right serif on the left base of each such R broken off, but a small part of the adjoining lower right side of the left upright of the R is broken away, first leaving a horizontal line in the fracture on dies 51 and 85B and later breaking in a diagonal up the right on dies 52 and 85C.

A recent search of quantities of British and Irish counterfeit halfpence by Mike Ringo of Albany, New York, turned up a break in the R on an obverse brockage of a counterfeit George III long hair Irish halfpence identical to those on obverse 51 and reverse 85B of the counterfeit 1785 British halfpence (Plate 25). There is no reverse on the Irish piece to show a date but the dates of genuine Irish issues having that type of obverse are 1775, 1776, 1781, and 1782 and the issues were struck at the Royal Mint in London. Irish style counterfeits for each of these dates as well as 1783 are known. The Irish brockage and the 1785 dated counterfeit British halfpence also share the same punches for other letters used in making those dies. Since the counterfeiter of the British halfpence

¹⁰ Gary Trudgen, technical note 104, Colonial Newsletter 71 (Oct. 1985), p. 913.



dated 1785 made the one pair of dies, 50–85A, before the R punch broke and cut the other dies with the same punch during its developing fracture, then the Irish style counterfeit obverse was cut about 1785 by the same counterfeiting enterprise. Thus it is safe to conclude that the dies used for the counterfeit halfpence dated 1785 were cut in the British Isles and not in America. In sum, "alternative 1" must therefore ruled out.

If 1785 counterfeit halfpence were coined in the British Isles for British distribution and use and subsequently some of those were sent to America either coincidentally or for commercial advantage the 1785 pieces would be in the same category as hundreds of such counterfeits of various dates and would not be exclusively American. The 1785 pieces would then be foreign items, some of which circulated in America, and would not satisfy "alternative 2." However evidence points to the fact that no distribution, circulation or use in Great Britain ever occurred.

PUBLISHED BRITISH DATA

D. T. Batty, a coin and curio dealer who lived in Manchester, England, is the primary key to the solution of the problem. Batty was a vigorous collector of British, Irish, and British Colonial copper coins. He undertook to study and publish an accurate description of every variety in that grouping, volume 1 of his work being published in 1868.11 He then stated that his own collection had 10,000 different varieties of such coppers. When volume 2 was published in 1877 he stated he had accumulated 15,000 different varieties; by 1886 in volume 3 he announced a rise to 25,000, finally reaching 35,000 varieties by 1890. In addition his compilation included details from "the most celebrated collections." After Batty's death volume 4 was completed by Frederick George Lawrence in 1898 using the remaining portions of Batty's manuscript to bring the listing through the Victorian Jubilee Year of 1887, although the eighteenth century portion concerning George III British style copper coinage had been completed by Batty himself.

¹¹ D. T. Batty, Bally's Calalogue of the Copper Coinage of Great Britain, Ireland, British Isles and Colonies, 4 vols. (Manchester, 1868-98).



Batty included counterfeit pieces as well as genuine pieces. The obverse and the reverse of each variety of each date of each copper denomination were casually described. There were almost no illustrations and no measurements. There were no categories or classifications of British style halfpence by other than denomination and date.

In volume 3 genuine and counterfeit British halfpence are described. The following Table gives the number of listings of such pieces of certain dates to demonstrate the extent of the coverage and to compare it to the number of genuine varieties described in a modern compilation by C. Wilson Peck¹² and thus to show the extent of the inclusion of counterfeit pieces in Batty's listing. This compilation includes only standard legend halfpence and does not include "evasion" halfpence with abnormal legends because Batty apparently relied upon James Atkins to publish that separate category of about 450 varieties.¹³ Atkins could not resist listing both a 1778 and a 1787 counterfeit British style halfpence with standard legends (these were struck at Machin's Mills near Newburgh, NY) because of the "evasion" nature of their dates, but there are no evasion halfpence in the Atkins list having a date of 1784, 1785, or 1786.

Quantities of Halfpence Varieties in Batty and Peck

Dates with Potential American Significance	Number of Genuine and Counterfeit	Number of Genuine Pairs of Halfpence
Found on Genuine and	Halfpence Varieties	Dies Recorded in
Counterfeit Halfpence	Listed by Batty ^a	Peck's Listing ^b
1747	5	2
1770	26	8
1771	55	11
1772	54	12
1773	93	10
1774	87	7

¹² C. Wilson Peck, English Copper, Tin and Bronze Coins in the British Museum 1558-1950 (London, 1960).



¹³ James Atkins, "Imitations of the Regal Coinage," The Tradesmen's Tokens of the Eighteenth Century (London, 1892), p. 385.

1775	252	4
1776	8	
1777	4	
1778		
1781	4	
1784	1	
1785		
1786		
1787	1	
1788		
.		=
Total	590	54

^{*} For each variety the obverse die and reverse die are described, and the same obverse or reverse die is sometimes used on more than one variety.

Examination of the Table reveals that Batty did not encounter any variety of a 1785 counterfeit British style halfpence. He was also unaware of any American made counterfeits dated 1778 or 1788. He did find an American made counterfeit dated 1784 (Vlack 14-84A) and only one (Vlack 17-87B) out of ten varieties of the American made counterfeits dated 1787. The description in Batty's text of the five varieties of 1747 halfpence clearly described the one American made counterfeit (Vlack 1-47A). In his descriptions of 1776 and 1777 counterfeits, none include any of the varieties attributed by Vlack to American origin.

The omission in the Batty listing of the many varieties of counterfeits which were made in or exported exclusively to America is clearly evident. His failure to be aware of any 1785 counterfeit halfpence leads to the logical conclusion that such pieces did not circulate in England and that if they were coined in England they were specifically for American use and promptly exported to America for that purpose.

Ernest Bramah, an English researcher familiar with Batty's work, observed, "1785. A genuine halfpenny of the first issue type bearing this date is said to be in existence." But he had never seen an example and said it would probably be a forgery. He may have read or have



^b No genuine halfpence were struck for circulation during the years 1776 though 1788.

¹⁴ Ernest Bramah [Smith], A Guide to the Varieties and Rarity of English Copper Coins, 1671-1860 (London, 1929), p. 67, n.

been advised of the Betts findings. In a 1944 supplement on the subject of English copper coinage prepared from his notes, there is no mention of the 1785 halfpence, but the 1788 halfpence was described as an "absurd date" in the category of "Forgeries of Remarkable Kinds." ¹⁵

L. F. Hammond, a collector of English copper pieces including counterfeits, in a 1929 address did not mention any 1785 counterfeits but illustrated and described as rare the 1784 counterfeit halfpence (Vlack 14-84A) as his item 65.16 This was from the same American made counterfeit dies which Batty had recorded.

No 1785 halfpence have been reported in English collections and none is known to have been found in England. The 1785 dated pieces now known in America all have had an American source. The only auction or other sale catalogue located naming a 1785 halfpence is the Jess Peters mail bid sale of April 20, 1965 (Decatur, IL), in which lot 495 included 17 different dates of British halfpence.

THE REASON FOR EXPORT

That quantities of counterfeit British halfpence were pouring into the United States in 1785 is confirmed in the January 11, 1786, Massachusetts Centinel which stated "scarce a British vessel arrives in any port on the Continent but what it brings very great quantities of rap¹⁷ half pence." The Massachusetts Centinel of December 21, 1785, and The Continental Journal and the Weekly Advertiser of December 22, 1785, both stated that "quantities of what are called coppers, but of a baser metal passing, should put people on guard, not only to prevent being cheated, but to stop their circulation." The increase in counterfeit British halfpence during 1785 is mentioned in the Massachusetts Spy of March 16, 1786, which said in regard to American and British struck counterfeits:



¹⁶ Ernest Bramah [Smith], "A Supplement to English Regal Copper Coins," ed. M. [Thomas Olive Mabbott], Numismatic Review 1, no. 4 (March 1944), p. 16.

¹⁶ L. F. Hammond, "English Copper Coins and Counterfeits," *Proceedings of the Croydon Natural History and Scientific Society* 10 (Croydon, 1929), pp. 94-109.

¹⁷ The word "rap" means of little value; the term was also applied to Irish halfpence.

A large number of counterfeit Copper Coin manufactured in this and the Neighboring States, has lately been in circulation in this Commonwealth but it is now generally refused as currency by the trading part of the community; nearly one half of the copper coin in this country for the twenty or thirty years past has been of a base kind, manufactured in Birmingham in England; however it crept into circulation, and did, until the late additional quantity made its appearance, pass for the same value as those which were genuine.

An inducement to the importation of counterfeit copper coin in 1785 was the expiration on November 1, 1785, of the 1750 Massachusetts Act prohibiting importation or knowingly passing counterfeit copper coins. There was no new Massachusetts law on the subject for eight months thereafter and this amounted to an open window encouraging counterfeit copper coin imports. Perhaps that is what causes "the late additional quantity" referred to in the above excerpt.

The Continental Congress found that a similar situation as to copper coins had occurred when the October 16, 1786, Ordinance for the Establishment of the Mint of the United States was passed with the following references to past practices:

The great quantities of base copper coin daily imported into or manufactured within the several states, is become so highly injurious to the interest and commerce of the same, as to require the immediate interposition of the powers vested by the confederation in the United States Congress, assembled of regulating the value of copper, the coin so current as aforesaid.

That no foreign coin whatsoever, shall after the first day of September 1787 be current within the United States.

An unsigned and unsubmitted work paper prepared in connection with Alexander Hamilton's report to the U.S. House of Representatives on Jan. 28, 1791, "On the Establishment of a Mint," commented on the quality and quantity of counterfeit British halfpence, "manufactured at Birmingham," shipped to the United States "for our use" after 1783:

The coinage of copper is a subject that claims our immediate attention. From the small value of the several pieces of copper coin, this medium of exchange has been too much neglected. The more valuable metals are daily giving place to base British halfpence, and no means are used to prevent the fraud. This disease,



which is neglected in the beginning, because it appears trifling, may finally prove very destructive to commerce. It is admitted that copper may, at this instant, be purchased in America at one-eighth of a dollar the pound.

British half-pence, made at the tower, are forty-eight to the pound. Those manufactured at Birmingham, and shipped in thousands for our use, are much lighter, and they are of base metal. It can hardly be said that seventy-two of them are worth a pound of copper; hence it will follow, that we give for British half-pence about six times their value. There are no materials from which we can estimate the weight of half-pence, that have been imported from Britain since the late war; but we have heard of sundry shipments being ordered, to the nominal amount of one thousand guineas; and we are told that no packet arrives from England without some hundred weight of base half-pence. It is a very moderate computation which states our loss, on the last twelve months, at 30,000 dollars, by the commerce of vile coin. The whole expense of a mint would not have amounted to half of that sum, and the whole expense of domestic coinage would remain in the country.

AMERICAN CATALOGUING AND DESCRIPTIONS

Since the Betts publication in 1886 no American cataloguer has included any mention of the 1785 counterfeit British style halfpence, but counterfeit halfpence of other dates were finally added to catalogues beginning in 1965. The Scott American coin catalogues and the Wayte Raymond catalogues made no reference to counterfeit halfpence.

The discovery of the 1776 counterfeit halfpence (Vlack 9-76B) coined by James Atlee was the basis for this author's 1958 article which demonstrated two major interlocks of the American made counterfeit halfpence with the Vermont and Connecticut coppers other than by mulings. Robert A. Vlack in 1965 was the first cataloguer to undertake a comprehensive listing of those varieties of counterfeit British style halfpence having an American origin. This grew out of

¹⁸ Eric P. Newman, "A Recently Discovered Coin Solves a Vermont Numismatic Enigma," ANSCent (New York, 1958), pp. 531–42.



Vlack's preparation and distribution in 1964 of photographic plates entitled "Tory Halfpence" which were revised and reissued privately in 1974 as "Early English Counterfeit Halfpence Struck in America," using illustrations from the collections of the ANS, Theodore Craige, Eric P. Newman, and Robert A. Vlack. No 1785 pieces were included in his catalogue or plates.

Kenneth E. Bressett added a paragraph describing American made counterfeit British style halfpence to the twenty-fifth edition of the "Red Book" in 1972.¹⁹ Don Taxay listed them in his "Scott Catalogue." No counterfeit halfpence dated 1785 were mentioned in either publication. In 1976 this author made reference to the 1785 counterfeit halfpence in giving a general overview of the history of genuine and counterfeit British halfpence which circulated in America. ²¹

The recent revival of research on the 1785 counterfeits was the result of James C. Spilman stimulating and nurturing early American numismatic matters by publishing *The Colonial Newsletter*. In June 1981 he included what he called "The Annotated Betts" and in the margin opposite the 1785 counterfeit British style halfpence he inquired: "Unknown today?" "Perhaps same die as Vlack obverse 15 which is muled with 1787 Immune Columbia?"

The unequivocal answer to both questions is no. Then in *The Colonial Newsletter* for June 1985 Mike Ringo and Gary A. Trudgen²² reported the reappearance of the 1785 counterfeit halfpence variety Betts had described which caused comment in the October 1985 issue by James L. Spilman and Eric P. Newman about the Yale piece, by Gary A. Trudgen about letter punch comparisons to Connecticut coppers, and by Michael Oppenheim about the need for expanded research on counterfeit coppers.²³



¹⁹ R. S. Yeoman, A Guide Book of United States Coins, 25th ed. (Racine, WI, 1972), pp. 25-26.

²⁰ Don Taxay, The Comprehensive Catalogue and Encyclopedia of United States Coins, 1st ed. (New York, 1971), p. 21; 2nd ed. (1975), pp. 32-33.

²¹ Newman (above, n. 6), p. 171.

²² Mike Ringo and Gary A. Trudgen, technical note 101, *The Colonial Newsletter* 70 (June 1985), p. 901.

²³ The Colonial Newsletter 71 (Oct. 1985), pp. 912-14.

CONCLUSION

When consideration is given to the following facts:

- 1. there was a desperate need for copper coins for circulation in the United Stated in 1785;
- 2. large quantities of counterfeit British halfpence were being shipped to the United States in 1785;
- 3. the first minting of copper coins by the state franchised coiners of Vermont and Connecticut occurred in 1785;
- 4. the first importation of Constellatio Nova copper coinage into the United States took place in late 1785 or early 1786;
- 5. the dies for all varieties of counterfeit British halfpence dated 1785 are made from the same set of punches;
- the punches used on the dies for counterfeit British halfpence dated 1785 are also found on a counterfeit Irish George III halfpence obverse;
- 7. no dies used for 1785 counterfeit British halfpence are muled with any other known dies;
- 8. there is no evidence that the counterfeit British halfpence dated 1785 were coined in America;
- 9. no other coins similar to British halfpence (including evasion halfpence and Irish halfpence) are dated 1785;
- 10. 1785 counterfeit British halfpence were prepared during or immediately before the year of their dating;
- 11. the first numismatic report of the existence of counterfeit British halfpence dated 1785 took place in the United States in 1886;
- 12. in Great Britain sophisticated collectors and writers had no knowledge of the existence of 1785 counterfeit British halfpence until at least 1929;
- 13. the few known counterfeit British style halfpence dated 1785 have been found in worn condition in the United States:

then a conclusion must be drawn under "alternative 2" that the counterfeit British halfpence dated 1785, coined in the British Isles, were exclusively and specifically for American circulation and thus should be included as early coins of America in future cataloguing.



1785 COUNTERFEIT BRITISH HALFPENCE DIE VARIETY DETAIL

The obverses of the 1785 counterfeit British style halfpence dated 1785 contain the standard British legend found on genuine pieces dated from 1770 through 1775, GEORGIVS · III · REX·, and the bust facing right. The reverses contain the standard British legend, BRITAN NIA·, and the seated figure of Britannia, but carry the date 1785. The obverse designations are arranged so as to coordinate with Vlack's designations²⁴ and the reverse designations use the last two numbers of the date as Vlack used at this author's suggestion.

OBVERSES

Obverse Designations	Description	Combined with Reverse
50	Top ribbon end points to right end of middle crossbar of E of GEORGIVS. Left base of each R is complete with serif on each side. Each G has a substantial crossbar. Diagonal rising from left base of X is thinner than diagonal rising from right base. Stop after REX nearer X than bust.	85A
51	Top ribbon end points to right end of middle bar of E in GEORGIVS. Each G has a substantial crossbar. Right end of left base of each R is missing due to use of broken punch. Continuation radially of center line of third I in III would hit tip of nose.	85B 85C
52	Top ribbon points to serif on left side of base of E in GEORGIVS. Right end of left base of each R is missing due to use of broken punch. Second G has an insignificant crossbar compared to crossbar on first G. Bow loop radially under R and right side of O.	85A 85C

²⁴ See above, n. 7.



Reverses

Reverse Designations	Description	Combined with Obverse
85A	Sprig points to base of right upright of N. Left base of R is complete with serif on each side. Right arm points to right side of T.	50 52
85B	Top of sprig almost touches lower right end of left base of N and points to left side of right base of N. Right end of left base of R is missing due to use of broken punch. Irregularly thick die break along circumference between 12 and 1 o'clock. Die break behind head. Right arm points to center of base of T.	51
85C	Sprig points far to right of N. Lower right end of left base of R is missing due to use of broken punch. Right arm points to center of A. Lower base line is very faint.	51 52

The weights in grams of the 1785 counterfeit halfpence examined are variety 50-85A, 7.92; variety 51-85B, 7.04, 7.29; variety 51-85C, 7.21, 7.63; variety 52-85A, 9.45; variety 52-85C, 7.55.

These conform to the weight of most counterfeit coppers circulating during the period and are well below the British standard of genuine pieces of 9.86 g (152.2 grains). The report of the Board of Treasury of the United States in April 1786 determined that "coppers" should weigh 157.5 grains (10.21 g) each and that if U.S. cents were coined they should be of that weight. The weight standard set by the United States was thus intended to be higher than that of genuine British halfpence and very much higher than the counterfeits in common circulation in America.



COUNTERFEITS DATED 1781

The circumstances concerning the striking of the 1785 counterfeit British style halfpence contrast with similar counterfeits dated 1781 (Plate 24, 40-44, 81A-E). There are no known counterfeit British style halfpence dated 1779, 1780, 1782, or 1783 and thus 1781 is an isolated year. Betts in 1886 mentioned that the Yale collection had one 1781 counterfeit so it is proper to assume from that and other 1781 pieces subsequently found in American accumulations that some 1781 counterfeits had been in circulation in America. Batty in England had listed four different varieties of 1781 counterfeits (2822-25), the last two of which were cast in copper instead of being struck pieces. These castings were apparently not made from originally carved patterns for molds but were produced from circulated struck counterfeits dated 1781 pressed into sand to make molds and repeatedly reused. Indeed, they may be from the same struck variety with different casting flaws. There are five varieties now known of the counterfeit British halfpence dated 1781. All such 1781 pieces known appear to be made from the same set of device and letter punches and these punches differ from the corresponding set of punches used on the dies for the 1785 counterfeits. The 1781 pieces all have a British Union clearly cut into the shield.

The situation as to the 1781 dated counterfeits is therefore substantially different from that of the 1785 pieces. Counterfeits dated 1781 were found in England having circulation wear and Batty and other English collectors recorded them. There were 18 evasion halfpence varieties dated 1781 listed by Atkins with various legends relating to Hebrides, Hibernia, North Wales, etc. The North American Token is dated 1781 but was prepared in the nineteenth century for Canadian use. A possible reason for using the 1781 date on counterfeit British halfpence was the revival in 1781 of the striking at the Royal Mint in London of genuine Irish halfpence of that date, the last prior genuine Irish halfpence coinage having been dated 1776. It appears that the 1781 counterfeits were struck in Great Britain in 1781 and circulated there until quantities of counterfeit halfpence of various dates including some 1781 pieces were thereafter accumulated and exported to America to make a profit on the differential in circulating value. Thus the 1781



counterfeit halfpence are not exclusively American as the 1785 counterfeit halfpence are.

VARIETIES OF 1781 STRUCK COUNTERFEIT BRITISH HALFPENCE

OBVERSES

Obverse Designation	Description	Combined with Reverse
40 (Batty 3822)	Top ribbon tip under right side of E. Bottom ribbon tip under center of right upright of G.	81A
41 (Batty 3823) ²⁵	Top ribbon tip under center of base of E. Bottom ribbon tip under left side of right upright of G.	81B
42	Top ribbon tip under center of bifurcation of upright of E. Bottom ribbon tip under left side of upright of G.	81C
43	Top ribbon tip under center of upright of E. Bottom ribbon tip under left end of crossbar of G.	81D
44	Top ribbon tip under right side of upright of E. Bottom ribbon tip under left end of crossbar of G.	81E

Reverses

Reverse Designation	Description	Combined with Obverse
81A (Batty 3822)	Tip of center upper leaf of sprig under right end of left base of N. Tip of left upper leaf of sprig under left part of left base of N. Arm points to right side	40

²⁵ Batty 3824 and 3825 are casts from molds made from struck pieces. Both may be from the same variety with different casting flaws or from different obverses and/or reverses.



Obverse Designation	Description	Combined with Reverse
	of base of T. Figures of date clear of baseline. Lower end of spear just left of top of first I of date.	
81B (Batty 3823)	Tips of left and center upper leaves under right base of A. Arm points to left end of base of T. Figures of date clear of baseline. Lower end of spear over space between 17 of date. Stop after NIA at height of crossbar of A.	41
81C	Right tip of right serif on right base of A over tip of top leaf of sprig. Tip of left upper leaf of sprig under crotch of right base of A. Arm points to left side of base of T. First I of date clear of baseline; 8 touches it; 7 and I overlap it. Lower end of spear over first I of date. Stop after NIA is just above baseline of letters.	42
81D	Tips of left and center upper leaves of sprig under left base of N. Arm points to right side of upright of T. Figures of date clear of baseline. Two lines of baseline are merged at right end. Lower end of spear over space between 17 of date.	43
81E	Tip of top leaf of sprig points to left end of left base of N. Tip of top leaf of sprig under space between A and N. Arm points to left end of base of T. Date clear of baseline. Lower end of spear over space between I and 7 of date.	44



ACKNOWLEDGEMENT

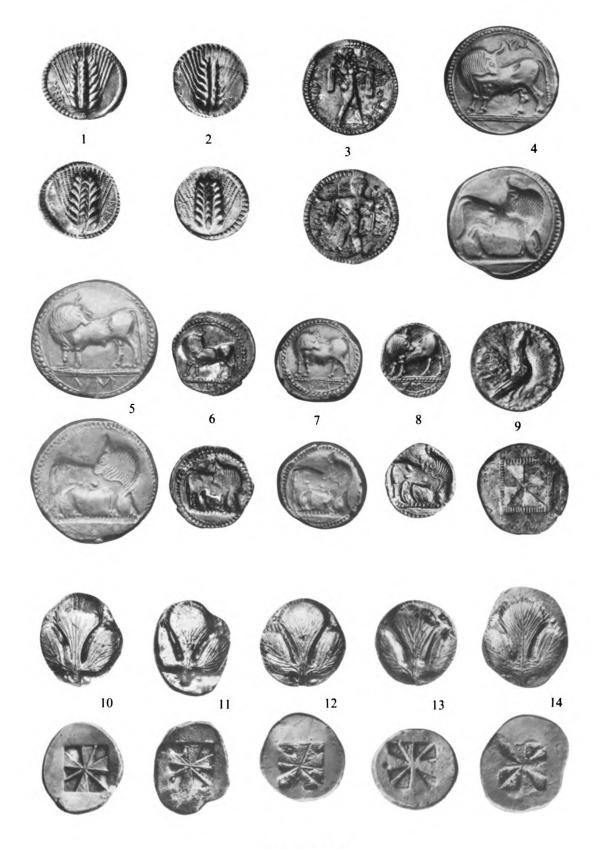
My appreciation for cooperation in the preparation of this article goes to Kenneth E. Bressett, Joseph R. Lasser, Philip L. Mossman, Michael Oppenheim, Mike Ringo, Mary Sauvain, James L. Spilman and Gary A. Trudgen. Photographs and weights of any 1785 counterfeit British style halfpence sent to the author, care of the ANS, would be appreciated so that further data on the subject can be assembled; comments are also welcome.



PLATES

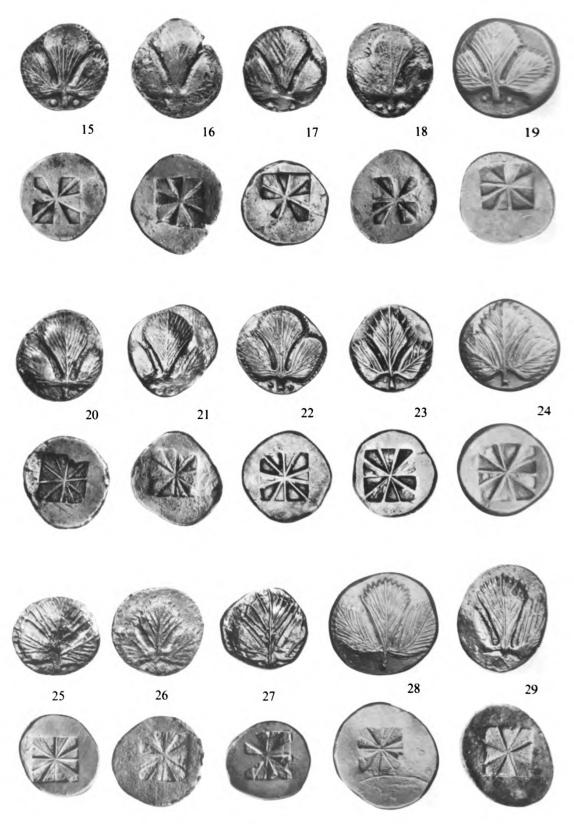


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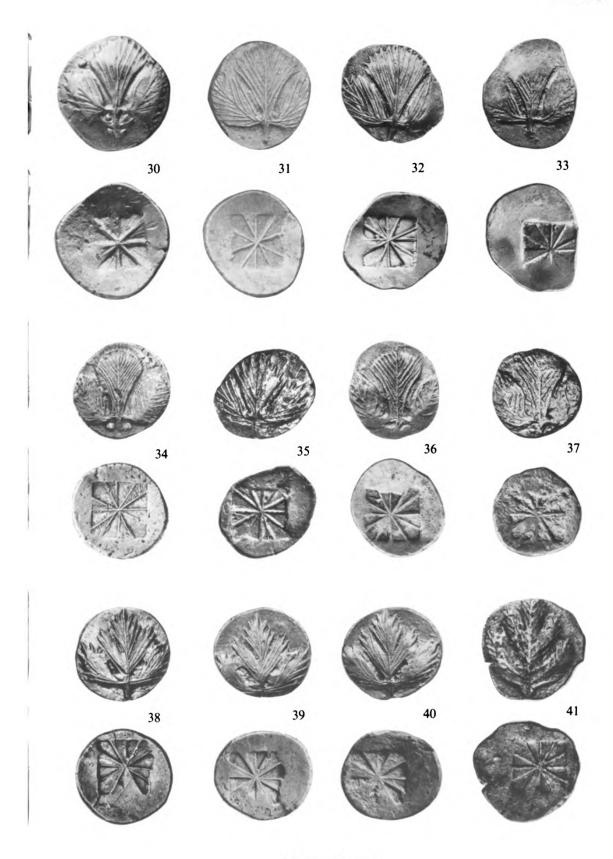
Selinas Hoard





Selinas Hoard



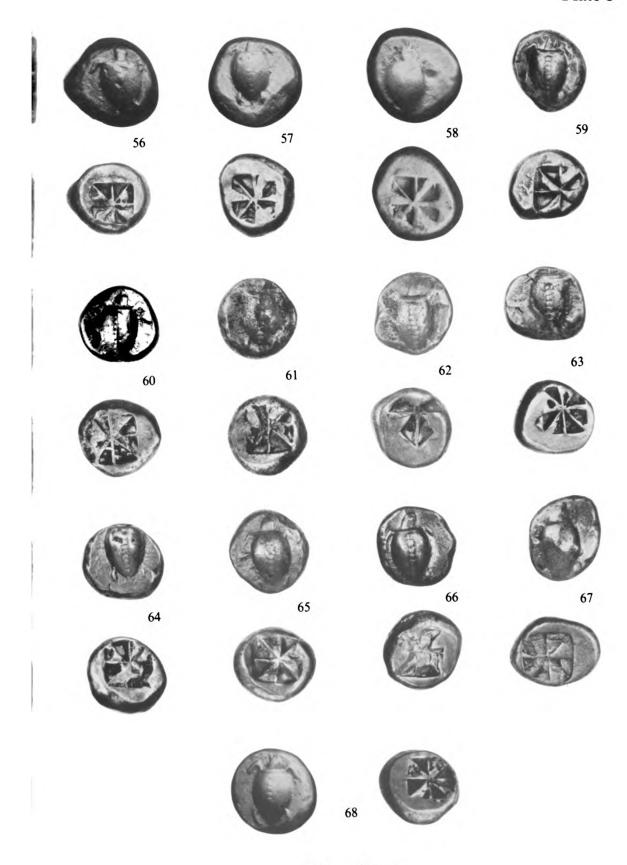


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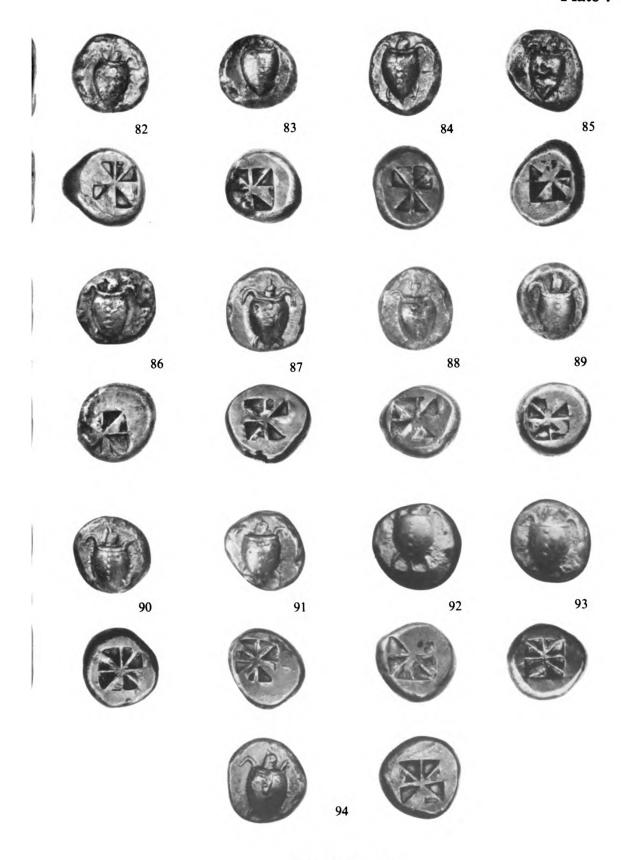


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Plate 6

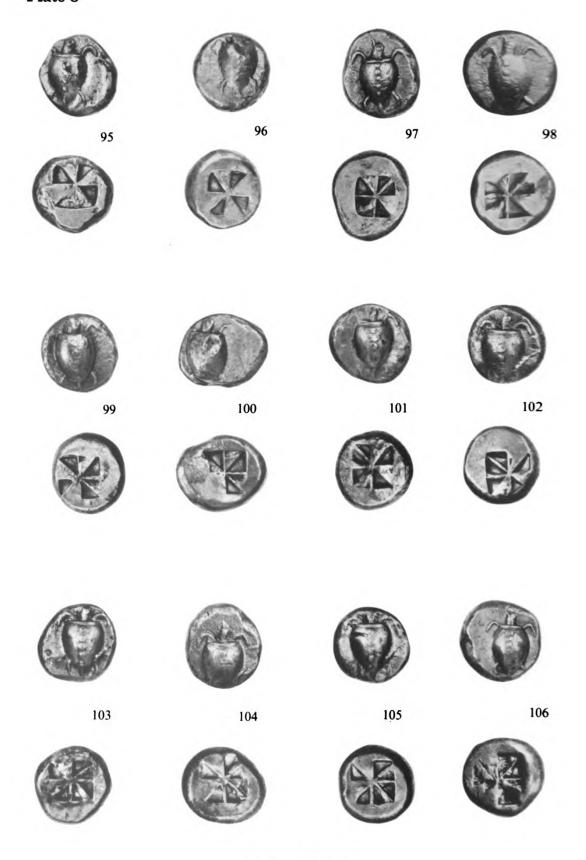


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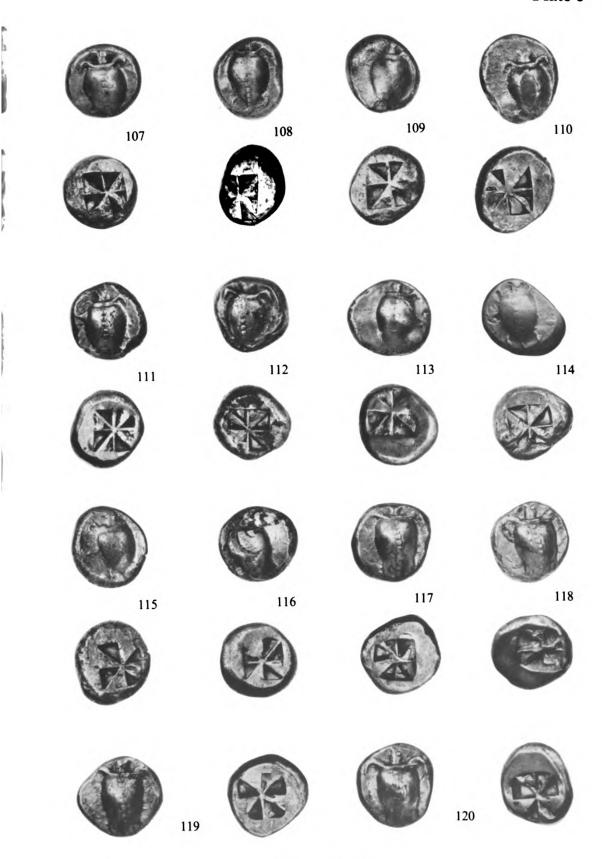
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Plate 8

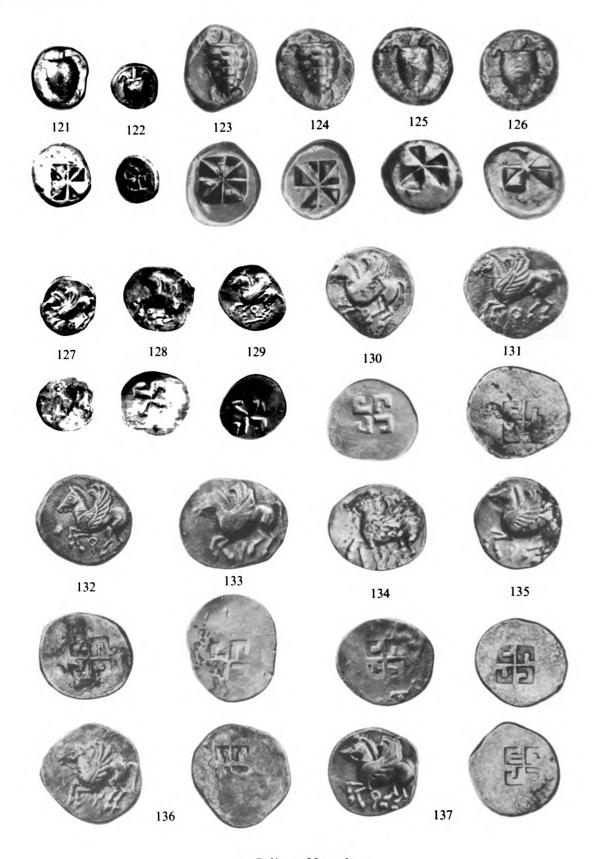


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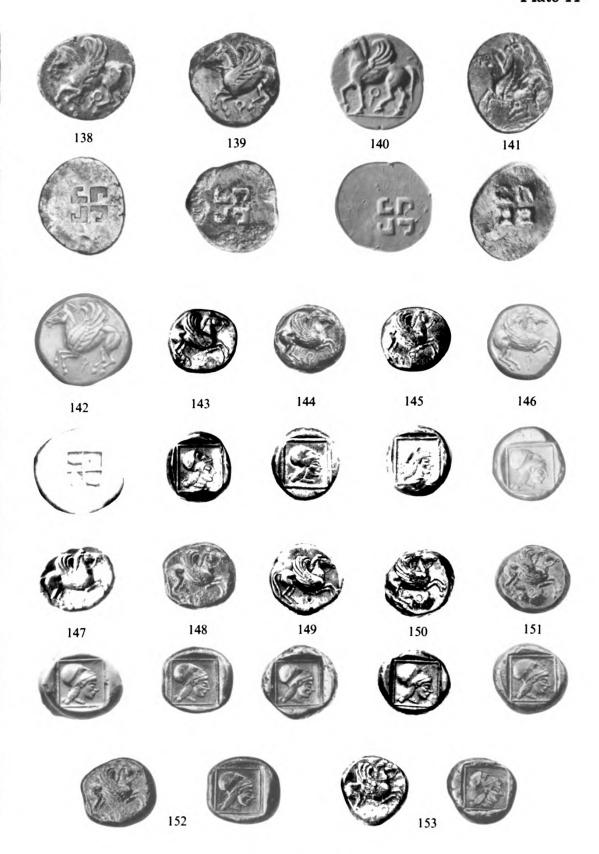


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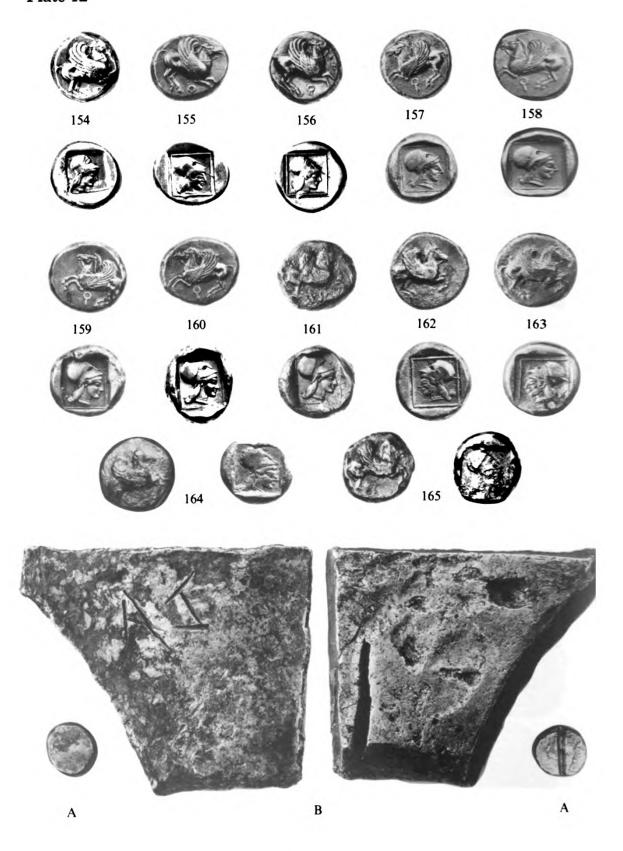
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Plate 12

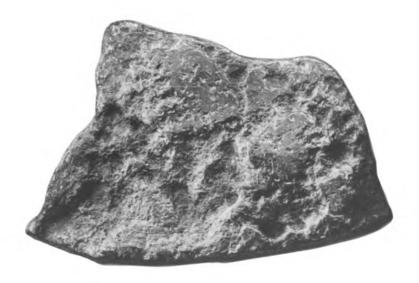


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C



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Plate 14



D



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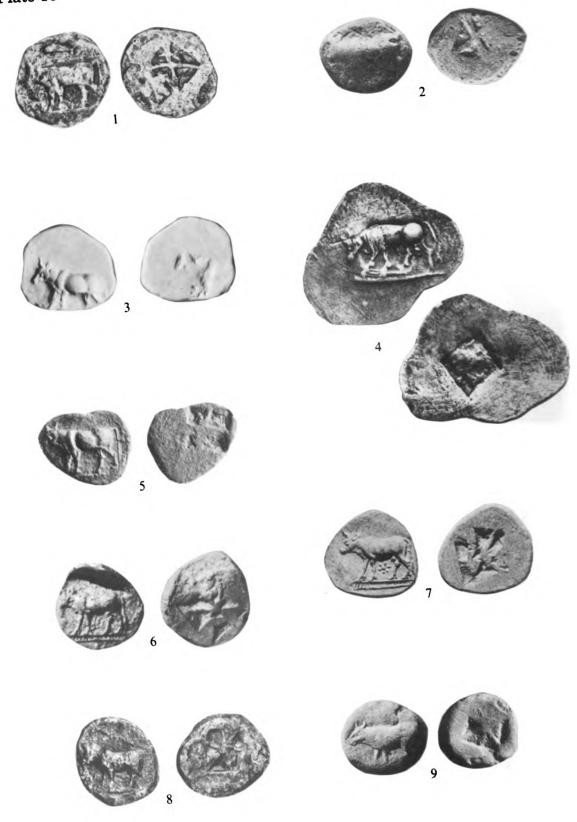
E



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Plate 16



Archaic Bovines







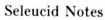
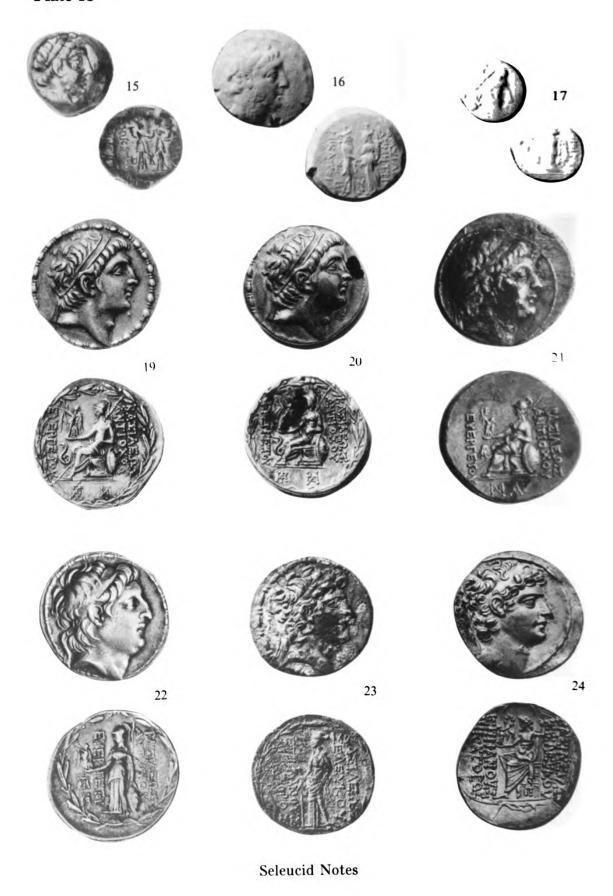


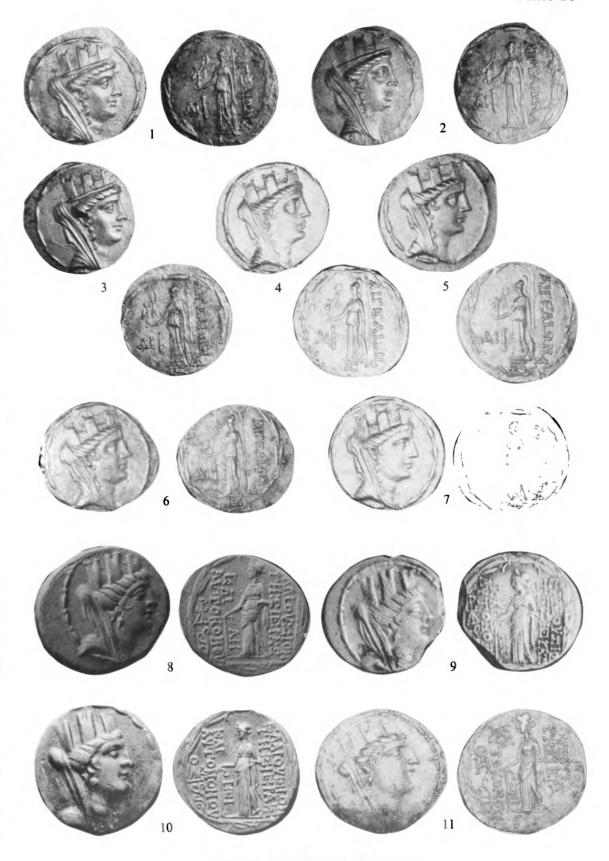


Plate 18





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Aegeae and Elaeusa Sebaste





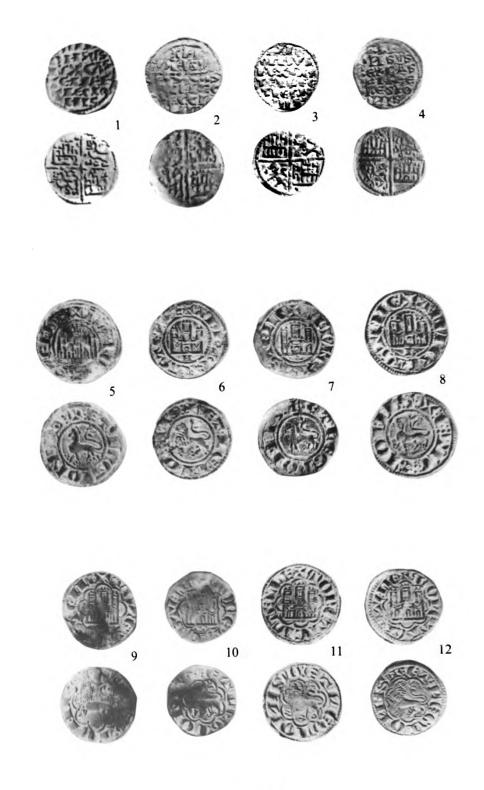


Nome Coins

Julian Caesar



Umayyad Frontier



Alfonso X



Sancho IV



Fernando IV





Alfonso XI



Plate 24





Varieties of Counterfeit British Style Halfpence dated 1785 and 1781







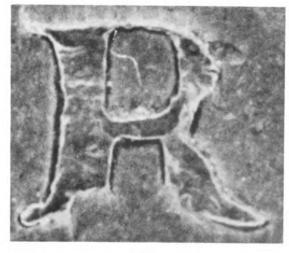
Irish obverse/brockage







British 51



Irish



British 52

Counterfeit British Style and Irish Style Halfpence Detail



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